CLINICAL STUDIES IN EPILEPSY

BY

L. PIERCE CLARK, M. D.,

Consulting Physician, New York City Children's Hospitals and Schools, Randall's Island; Letchworth Village for Mental Defectives, and Craig Colony for Epileptics

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Introduction. The study of essential epilepsy by the case-method is here undertaken to show that this disorder is a logical sequence of a certain type of individual make-up in the process of its natural development, and that the varied epileptic reactions occurring in such individuals have more or less of a definite relationship to the existent defect of instincts, plus the precipitating causes which act as psychic irritants.

The first section re-states the hypothesis of the nature and pathogenesis of essential epilepsy with a review of the literature bearing upon this particular hypothesis; then follows some case notes in abstract to illustrate the make-up and the genesis of the first epileptic reaction.

The second section is based upon a study of a single case to show the ordinary pathogenesis of essential epilepsy. The third section is another study of the make-up, the environmental stresses, and the sequential epileptic reactions that occur in a classic, mildly deteriorated individual. The fourth section is a study of two septs of familial epilepsy with detailed notes of the pathogenesis of fits in one member. The fifth section embraces some therapeutic suggestions derived from the newer psychologic views of essential epilepsy. The sixth and last section is devoted to an analysis of several arrested cases of epilepsy, and the probable mechanism by which the discontinuance of the disease was brought about.

Section I.

THE NATURE AND PATHOGENESIS OF ESSENTIAL EPILEPSY.

Two fundamental principles were brought forward in my first thesis* on the nature and pathogenesis of epilepsy: First, that there is invariably present an epileptic constitution or make-up in those individuals who later develop essential epilepsy. The nucleus of this personality defect is a temperament of extreme hypersensitiveness and egotism and all that these two main characteristics entail. This defect in character is not to be taken in any narrow or moralistic sense, but is to be considered as a temperamental defect in a broad, biologic view, a personality-defect which makes its possessor incapable of social adaptation in its best setting and which, if it remain uncorrected, renders the individual entirely inadequate to make a normal adult life. Secondly, that the seizure phenomenon in essential epilepsy is a direct outcome of the inability of such persons to subordinate their individualistic tendencies to those of the so-called social demands and constitute a reaction away from the difficulties in a loss of consciousness. In the most badly adapted individuals, in which the temperamental defect is also coincident with intellectual and somatic defects of a pronounced type, one may note that even the minimum of environmental stress may seemingly be lacking, and yet a steadily progressive epileptic state persists. In such the epilepsy attains its maximum frequency and severity. In other individuals less afflicted with an adaptational handicap, the disease of epilepsy does not appear until adolescence, or even later when a full adaptive demand of an independent career is required.

Perhaps it is unnecessary to say that the nature of the fit reaction is essentially a psychobiological one, and is doubly motivated. First: it is to make away with an intolerable adjustment demand. Second: it is to retreat, to regress, to a state where harmony and peace were wont to prevail. The most primitive pleasurable state is that which is supposed to have existed before consciousness developed, as

*N. Y. *Medical Jour.*, Feb. 27 to Mar. 27, 1915.

has been so correctly outlined to be the infantile and fœtal life—a state of metroerotism.

Inasmuch as the whole hypothesis of the pathogenesis of the disease rests upon the recognition of the particular type of constitutional make-up of the epileptic, I shall again undertake to fully illustrate the psychobiological features of this particular constitution as shown in a consecutive series of actual case histories, which will show the innate defect and how it reacts from a demanding environment in the seizure phenomena of epilepsy. Obviously this thesis will concern itself with the essential mechanism of *classic idiopathic epilepsy* only. The wide variation in the individual pattern, the possible reactions to different types of environmental stress, etc., will have to be considered at another time in handling borderland cases. This study hopes only to establish the main principle of the essential epileptic temperament and its seizure reactions.

A review of the literature at this point, tedious as it may be, I should have considered unnecessary if in many discussions it had not been specifically denied that there is a constant make-up, or a so-called epileptic constitution in the frankly pronounced epileptic. One also finds this view actively held in neurologic writings, and I therefore feel obliged to re-state the connoted opinion of some of the more important writers upon this subject. It may be added that epilepsy, like many another nervous disorder which lies in the adjacent fields of neurologic and psychiatric study, has suffered in its complete delineation by the workers in both fields, in that each group has ofttimes misstated the different symptomatology not rightly belonging to the province of each other. For instance, if one follows the psychiatric literature proper, the neurologic charge against it is that the disease when thus observed has had a psychiatric setting added which was not present in the essential disorder when it was observed neurologically, and therefore such data should not rightly be interpreted as a necessary part of the epilepsy itself, but attributed to certain psychic elements that apparently have arisen *de novo*.

However, since sane interned epileptics have been har-

bored in institutions that care for all types and grades of severity of the disease, one finds that these institutional reports adhere closely to the views of the older psychiatric writers upon the constancy and degree of mental make-up of the epileptic constitution and that the latter is invariably present, though varying in degree, as might be expected.

We may now cite briefly the views of a few authors taken at random relative to the epileptic make-up:

Vogt,* in his work on the psychology of epilepsy, first quotes *Sommer* on the epileptic psyche as a total picture. Essentially he defines it as shown in a poverty of ideas, prolonged reaction time, egocentricity, many religious reactions and acts of servility. All these views were confirmed by the studies of *Fuhrmann*, *Bonhöffer*, *Kræpelin* and *Isserlin* as well as the findings of others. *Jung* and *Ritterhaus* took up the subject on a wider and more precise basis of psychologic study; the former investigator found a series of peculiarities in the epileptic which also occur in some degree in normal subjects, especially the uneducated class. There was present superficial associations, which were in part influenced by the ideas of the patient. From another viewpoint the phenomena resembled those seen in the imbecile. In many cases the stimulus word called forth those which were nothing but explanations; these involved the egocentricity, religiosity, and the like.

Rocmer having tested a patient when he was "out of sorts," found a disturbance of "secondary identification" involving memory pictures, etc., while primary (special sense recognition) remained normal. *Eintinger* found a fewness in all associations or oligophasia, with perseveration and reiteration; all of these pointed to an essential poverty in the affectivity. *Wiersma* found periodical variations in attentiveness. Finally, *Ritterhaus* sums up the epileptic psyche as follows: There is a narrowing of the circle of ideas; there is prolongation of reaction time, egocentricity, emotional reactions and circumstantiality. The preceding results lose somewhat in value as but relatively few epileptics were tested.

Vogt states that while we are justified in isolating major

*Vogt, "*Psychology of Epilepsy*;" in Aschaffenburg's Handb. d. Psychiatrie.

interval phenomena, the mildest forms simply represent an alteration of the total personality. When this is carried to a higher degree we speak of the epileptic character (developed from the alteration); beyond this "character" we find the epileptic psychosis. Vogt declares that the "epileptic character" is a peculiar mixture of psychic components which are mutually antagonistic. Obstinacy and contrariness may exist with a high degree of docility, apparently based on change of moods. Mendacity and ethical perversions may be seen with piety and pleasing speech; openness contrasts with distrust; misanthropy with a childlike cheerfulness. Through all this variegated expression, however, one notes a general tendency to a severe ethical degeneration. The subject becomes unsocial, quarrelsome, is inclined to lie and employ violence. Hence the great forensic importance of the "character."

The intellectual faculties strictly as such may remain intact during the development of the character; until the epileptic psychosis develops with its well known intellectual failure. This is naturally accompanied by persistence of the character changes—the piety, the narrowing of the horizon to self and family, the emphasis of trifles, and the lack of judgment. The patient undervalues his disease and his mental state as he magnifies his own importance and becomes arrogant, etc. Vogt finally adds that in depressed moods the affects are one-sided, monotonous and superficial; or they are irritable and manifold. They are sensitive, feel uncomfortable, are whimsical and 'know it all;' they show great obstinacy, distrust, and are inclined to outbreaks of rage. Their intense irritability, their utter disregard and tendency to violence, make them the most difficult and least welcome in institutions. The instantaneous change of mood is largely responsible in this respect.

Again, under "epileptic insanity," *Kræpelin** described in full a case which seems to be only an exaggerated instance of epileptic alteration with twilight states. No true psychosis was mentioned. The first case, an epileptic alcoholic, exhibited much of the "character;" but the peevish-

*Kræpelin, "Lectures on Clinical Psychiatry," Am. ed., 1913.

ness, irritability, etc., might be attributable to the alcohol. The patient seemed driven to rage and violence by severe pains and other physical symptoms. These phenomena seemed to appear in spells, the patient showing great depression which in turn led him to drink. He had attacks of ill-humor every week or two. The patient was normally egotistic and pietistic, and boasted much of his military achievements (an old soldier). He looked down on all other men, could do every man's work better than the man himself; he was ceremoniously polite, saluted the doctor on every occasion—but also expected a salute in return. He took great pleasure in saying: "The good God never forsakes a German." This patient improved when alcohol was withdrawn. Another patient was most of the time friendly, easy to manage, and quiet, but had frequent spells of depression and ill-humor, with great irritability. He stated: "I have times when I am not at all irritable, and then again times when I get wild at every trifle." This second case, according to Kræpelin, had not yet developed the character; when he did, the author believed the patient's horizon would narrow, he would become egotistical with an exaggerated self-esteem, and have a tendency to phrases and pious saws. Another patient gave a "connected but long-winded" account of his past and present status. He spoke of joyous moods. He had had states of great excitement and had committed crimes against property and person. This patient was an alcoholic. He had about everything sooner or later, including a "visit to Heaven" which Kræpelin ascribed to the influence of alcohol.

In summarizing the epileptic character, *Arndt** states, that he is possessed with an inward fervor manifested as love or religion. The latter was throughout egotistic, which explained in part the epileptic moment which was a mixture of cold calculation, regardless hardness (callousness), cruelty, malice, piety, etc. Nevertheless, side by side with a diabolical irritability and irascibility, with uneasiness, distrust, 'know-it-all-ness,' obstinacy, stupidity and desire for mastery, he shows docility, obsequious and flattering behavior, and self-depreciation. The fire of epilepsy is like

*Arndt, "Lehrbuch d. Psychiatrie," 1883.

enthusiasm, in the interest of revenge and bloody atonement. In the epileptic character there is something violent and titanic. Very characteristic of epilepsy is attachment to the family (as a whole, not perhaps to individual members); they sing the family's praises, not forgetting themselves; and Morel stated that self-praise was a sign of the epileptic character. Arndt believes that the alcoholic character, especially the dipsomanic type, strongly resembles the epileptic. There is the same blunt egotism, indifference to wife and children; the same reaction to irritation, etc.

While *Bianchi's* view* of the epileptic character is necessarily drawn from the statistics of a people highly unstable emotionally, it is nevertheless quite in accord with those given before; thus, speaking of the psychic disturbance in epileptics he rightly holds that it is always present in essential epilepsy, and that the latter properly begins with the epileptic character. This is inherited or acquired, more frequently the former, and manifests itself at an early age, or as soon as the infant realizes its relationship to the family. The child is less bright, *i. e.*, more dull, than normal. It weeps much and without cause, and over long periods, even until cyanosed. It persists in all exaggerated and capricious desires, despite attempts to reason with it. It reacts by scratching its face, breaks objects, raises its voice, stamps its feet, threatens, etc. When to these are added sleep disorders—nightmares, terrifying dreams, somnambulism—the character is perhaps developing into epileptic seizures.

In favorable cases these symptoms are outgrown; in unfavorable cases the subjects are beyond treatment. The morbid character undergoes a hypertrophy of the ego. In childhood and adolescence the epileptic character in one of its groups closely resembles the moral character of the antisocial instincts of the criminal. There is the same inadaptability to environment, the preponderance of individualistic instinct, the cruelty, laziness, vagabondage, evil life, precocious and excessive character of the sexual instinct, irascibility and impulsiveness in both. If at ado-

*L. Bianchi, "Textbook on Psychiatry," 1906.

lescence there are no convulsions, the subject must be regarded as a criminal (save, perhaps, when there is a history of infantile convulsions). In another group the personality is less profoundly disturbed. These seem normal, well-behaved children in the home; when they leave for boarding schools, etc., an anomalous character develops, due largely to the teasing, chaffing, etc., of which they are victims. They now show excessive irritability, suspicion, impulsiveness, irascibility—in other words, they act excessively to their environment. The more they change the greater objects they become for provocation. The subjects now begin to threaten, and have to be sent home, even if no convulsion appear.

As maturity is approached, further changes of character appear. The epileptic isolates himself, avoids company and conversation and at the same time turns to religion, or rather the outward forms of it. He goes to church daily and at home says prayers and chants. He becomes excessively humble—meek and submissive to those whom he meets. He assumes an attitude of inferiority and an humble, reverent pose. Beneath all this, however, he is irascible, captious, violent, impulsive and cruel. A slight cause given, and the mask is at once thrown off.

Irascibility and impulsiveness are then, in Bianchi's opinion, the chief features of the epileptic personality; epileptics lose self control completely at the least opposition. Their violent, obstinate desires are too overpowering to be resisted, hence the egotism. But there must be defect in the associative work of the brain. Malice is based on two fundamental sentiments,—consciousness of inferiority to others causes hatred and suspicion; and contrariness, from permanent irritability of the ego. The whole life of the epileptic shows hatred, usually concealed and veneered, perhaps, with good behavior. On the slightest provocation the hatred bursts forth in all its brutality—all that is evil, deadly, destructive is revealed to the mind of the subject, although it may not be betrayed in actual display. The religious sentiments are highly primitive, mystical and ceremonial. Prejudiced against so many things as they

are, these subjects easily abandon themselves to onanism, sexual excesses and perversions, alcoholism, etc.

The father of the epileptic Misdea is cited by Bianchi as one who was not himself an epileptic but showed the most profound features of the epileptic character. He used to curse his brother priests because they did not walk properly to chapel or carry out his orders to the letter.

They like wine (Bianchi is describing Italians), and a little of it awakens their brutality. Then they become exacting, egotistic, captious, obscene, cynical, impulsive and cruel. The remarkable mobility and contrasts suggest double personality (*Lombroso*). Some epileptics, excluding the imbecilic, are not so nearly normal as they appear. Many learn trades and professions, but are weak on the affect side. Keenness of attention to every day realities is subnormal, and this is responsible for minor automatisms, such as day dreaming, absent-mindedness and various attitudes of preoccupation.

One must remember that Bianchi is not writing of epileptic imbeciles or dements, but of quasi normal subjects—their perceptions are weak and the memory is not trustworthy. Ideation is variable. They are indifferent to all that does not concern them. Grandiose ideas are common with mystic ones, and ideas of persecution are ill defined and fleeting (paranoidism).

In regard to the better class of epileptics Bianchi has never seen a superior intellect and character in hundreds of cases treated.

It would appear that a full recognition of an epileptic constitution as such, independent of the deteriorating influence of excessive attacks which only brings it more markedly in view, was not much recognized before 1860 or 1870; thus *Falret* the elder, an observer of about that time, and *Billod* (1882)*, a pupil of Falret, as well as *Kirchhoff*,† who wrote as late as 1890, believed that the peculiar mental make-up of so-called sane epileptics did not possess mental characteristics distinguishable from others in their particular station in life.

* E. Billod, "Des Maladies Mentales et Nerveuses," 1882.
† Kirchhoff, "Handbook of Insanity," Am. ed., 1893.

It is interesting to note the view which a practical neurologist would have upon the presence of a particular and distinctive constitutional make-up. *Oppenheim**, a neurologist of this type, states that the intellect of an epileptic may be "absolutely intact." He cites the examples of Cæsar and Napoleon, but quickly adds that we see no such cases to-day. In another division of his work he states that sane epileptics are "often excitable, suspicious and irascible" but hastens to offer an apology based upon the nature of the disorder from which they suffer. He finally adds, however, that a normal intellect becomes impaired by the fits.

As soon as the defects in the affect were recognized in psychiatry independent of purely intellectual ones, a notation of the former began to appear in the literature of the psychology of epilepsy. Thus *Hoche*† noted that epileptics undergo disturbances of the affects as well as in their intellectual life. When the former are of a certain intensity they are known as the psychic epileptic degeneration. In the foreground, occurring mostly in exacerbations, we find excessive excitability, oversensitiveness, whimsicality and attacks of rage from trifling causes. Such states are really persistent, but have, as stated, a certain periodicity. The psychic interests become narrowed, especially in the ethical aspects. There now develops the peculiar behavior—absence of affection, egotism, entire preoccupation in self, regardless of the rights of others, obstinacy, false imaginations of being snubbed, and accusations based thereon. With self satisfaction may be associated family pride, bigotry, piety, etc.

"Epileptic degeneration" is a term restricted to the worst of these cases; in mild cases we see in most cases only the "epileptic character."

Occasionally as early as 1887 the dissociation between the epileptic constitution and the mental changes brought about as the result of the attacks is to be noted in studies on epileptics. Thus *Seeligmüller*‡ quotes *Nothnagel* to the

* Oppenheim (translated by Bruce), "Textbook on Nervous Diseases," 1911.
† Hoche, "Handb. d. gerichtlichen Psychiatrie," 1901.
‡ Seeligmüller, "Lehrbuch d. Krankheiten d. Rückenmarks und Gehirns," etc., 1887.

effect that two widely different conditions are to be considered here, viz.: the central epileptic alteration, and the attacks. The former is inherited, and due to descent from those with neuropathic and other taints, etc. With this author "alteration" appears synonymous with "predisposition"; it does not mean dementia or secondary changes. Under "interparoxysmal pause" we find here as with other authors phenomena described which represent secondary alteration. The epileptic is a misanthrope, to a greater or less extent; he is habitually out of sorts, is irritable, distrustful, obstinate, irascible, etc. At times, and often near attacks he is unnaturally cheerful. This the author regards as wholly due to the unfortunate social status of the epileptic, his dependence on others, his loneliness. Even the wild outbreaks of rage and destructiveness may be due to the hate of all people who are normal.

In recognizing the preconvulsive make-up of the epileptic constitution and citing first the egocentricity and hypersensitiveness as the essential mental features of the picture, and later the occurrence of obsequiousness, effusiveness and sweetness, *Regis** notes that the latter were but the natural outward adjustments to compensate for the inner repressed feelings.

Now and then one finds in the neurological literature as in contradiction to the psychiatric or psychologic view, an attempt to find an organic basis for the epileptic make-up just as we have seen some authors strive to see many of the mental characters produced by the social restrictions which the interned epileptic endures as a result of his malady. Thus *Cramer*†, while firm in the belief that epilepsy proceeds from cortical alterations, becomes confounded and unable to explain the constitutional make-up by such changes. However, in an attempt to rationalize the latter he finds certain evidence of a particular form of abnormal excitability of the nerve centers of the cerebrum as a result of which discharges result from the summation of a "subminimum irritation", there being in consequence an

† Regis, "Précis de Psychiatrie," 1909.

‡ Cramer, "Die Epilepsie," Handb. d. Nervenkrank. im Kindesalter (Bruns, Cramer & Ziehen), 1912.

inclination to react by convulsions in such individuals. Again, such a "character" is subject to disorders of metabolism. He adds that many persons with the constitution never really become epileptic as the precipitating causes are not applied to such. This author lays down the character make-up as shown by the same behavior and conduct as outlined by Vogt and others. While he is willing to admit the foregoing is the invariable rule for the psyche of adult epileptics, he takes marked exception that it exists in *childhood*. He claims to have seen well developed cases of epilepsy in the young *without a trace of psychopathic make-up*. He states, without definite analysis of *any case material*, that he has an entire series of cases, chiefly drawn from the upper classes of society, in which epilepsy occurred in "model children." In school they were among the first in their classes. We may interpolate here to say that one knows only too well how clever and devoted parents carefully shield such children from a too precise character analysis. Our author seems willing, however, to admit that such children begin to show the epileptic constitution toward the end of puberty—an analogously easy place for many observers to note the beginnings of many another neurosis and psychosis. A double substratum of degeneracy and epilepsy is postulated by our author for a "very large group" of children who have the character and later develop epilepsy, and then follows the general description of the well outlined constitution of our contention. Our author's degeneracy picture is held out of the epileptic entity,—he says it "can not be regarded as any part of the early stage of the after-coming malady."

Nearly all authors agree that the drug habitués and dipsomaniacs have an identical constitution and often more marked than that seen in the epileptic.

Under the heading of "epileptic temperament," *Turner** notes it is rare to find epileptics without some mental obliquity, and even when slight and unobtrusive is a feature of their hereditary degeneration. On the whole they are self-opinionated and egotistical, have a high degree of conceit and assurance. Their talk is usually prolix and

*A. Turner, "Epilepsy," 1907.

pretentious. The character is mobile and unstable, and they are now elated, now despondent. This affects their mental processes. Other epileptics are tenacious and obstinate and have strong likes and dislikes. Some "great" epileptics seem to have owed their greatness to grand ideas and tenacity. The majority of epileptics are religious in strong contrast with their practical ethical standards.

Among the phenomena of latent epilepsy *Hartmann* and *di Gaspero** believe that long before the epileptic symptom complex with its first undoubted paroxysmal phenomena becomes manifest, an individual may show prodromes, the relationship of which, however, to epilepsy can not be maintained with certainty. They cite many variations in affect life in getting family histories of epileptics, and find such are hardly ever missing from such histories. Here belong the tendencies to abnormal, endogenous changes of temper, excitations of irascible nature, anxious fears and sudden depressions. Aside from the sequalæ and prodromes of an attack, the authors mention marked exhaustibility, restlessness, anomalies of disposition, increased irritability, distrust, depression, anxious fears, tendency to violent impulses. In addition to the usual slight mental defects, the authors note a tendency to unreal ideas. There are also memory falsifications. The affect life as a rule shows great departures. There are transitory phobias, ecstasies, and, most common of all, irritable and depressive states. As high as 78 per cent are said to suffer from these endogeneous anomalies of disposition. As a rule consciousness is clear.

Under the progressive deterioration seen in advanced cases of epilepsy, the authors refer to the deterioration. As a rule the subjects react abnormally to external impressions. The affective changes constitute that ethical depravity of the entire personality known as the epileptic character. We see here a morbidly augmented irritability of the temper, with a special tendency to affect outbreaks of anger. The patients are regardless, often aggressive. An egocentric contraction of the entire emotional life, pathological lying, etc., may develop. The patients are hard to manage, irresponsible, unsteady, and without definite aim. They are

*Hartmann and di Gaspero, "Epilepsie," Lewandowsky's Handbuch, 1914.

obstinate but may show a heightened sensibility. These states gradually pass on to dementia.

*Gelineau** and *Griesinger*† both dilate at length upon the essential continuity of the primary epileptic constitution, its egocentric and hypersensitive characteristics and its ultimate degeneration into the classic mental make-up noted in previous authors. The latter mentions the labile affectability to be inherent and to exist for years before the malady as such develops; further, that the slightest demands of an exacting environment cause all the mental characteristics to show themselves on the surface. The former author (Gelineau) cites numerous cases in which he believes overwork to have caused the disease. But his views are quite understandable on psychologic grounds where we find that the stress of disagreeable work, beyond the desire or capacity of the individual, produces "moral perturbations, disequilibrations, and finally convulsions." His comment on the instances are that the overwork seems to be the result rather by reason of the fact that the individual does his work with certain "overscrupulosity" and feels an inability to reach desired results. One patient in particular who was a writer had *his* overwork induced by writing and re-writing a sentence "over and over, seeking for a more euphonious expression."

Voisin has stated that every epileptic is original, fantastic and difficult to live with, and that in a careful analysis of the character make-up of one hundred and forty-eight cases of so-called mentally sound epileptics less than 10 per cent showed a perfect balance in the emotional make-up. The intellectuality in all these cases was normal or even above the average. Continuing their own investigations *Grasset* and *Rauzies*‡ came to the conclusions that no epileptic was of sound mind. It is false to declare, however, that they are "alienated in the ordinary sense." Their defect is in the emotional realm, they are essentially egocentric and hypersensitive individuals and are so in some measure from birth. In describing the ordinary mental state and charac-

*J. B. Gelineau, "Traité des Epilepsies," 1901.

†Griesinger, "Psychische Krankheiten," 5th ed.. 1892.

Grasset‡ and Rauzies, "Traité pratique d. mal. d. système nerveux." Vol. ii, 1894.

ter of epileptics in a large number, *Féré** believed that the character and manner of epileptics can easily cause suspicion of the disease long before the convulsions appear. The emotional make-up is mobile and explosive, the former rests upon a foundation of "impotence and sadness." They may change in mood so suddenly as to resemble a dramatic coup. Long periods of calm are interrupted by brief periods of mobility. In others the latter is constant. Paroxysms are separated only by intervals of repair. Subjects pass from an attitude of enthusiasm and benevolence into one of implacable hate. They may be tender and generous, and then show sordid rapacity and violence. They may now be polite and obsequious, then all at once insolent, or may be gay and expansive, then taciturn. Sometimes the change is in the mental processes. A submissive subject suddenly becomes an obstinate adherent to a certain idea. The matter may be ever so petty but he can not be reasoned out of it. The epileptic is not always changeable. He may become permanently attached to certain people or he may cherish certain ideas and purposes with most extraordinary tenacity—such as is seen in "great" men. (In point of fact, this is the rule.) Violence and explosiveness may be contrasted with the following periods of depression and amnesia. This depression is the real cause of moral malaise, religiosity, pessimism, and jealousy (very common). Insolence and cruelty often pass into obsequiosity and panphobia and are thought by Féré to be due to jealousy, for the epileptic realizes his helplessness and defects in a vague manner.

Matter equally pertinent is that mentioned by *Ardin-Delteil*† in his study of the epileptic psyche, that the mental affectivity is a basis of defect in epileptics. The epileptic is in a state of mental hyperesthesia which exaggerates sensations and the ideas derived from them and which cause irresistible acts (*Echeverria*). It seems that in these brains there is always a certain virtuality of explosion, "a deep and deaf irritation of which the convulsion is the maximum term." The epileptic finds himself in a constant state of

*Féré, "Les Epilepsies et les Epileptiques," 1890.
†Ardin-Delteil, "L'Epilepsie Psychique," 1898.

nervous tension, revealed by instability, petulence, perversion of sentiments, hyperesthesia, promptness to motion. Like a drop which causes a full vase to run over, any slight cause, material or mental, leads up to the explosion. The "potential" accumulates until a discharge results, and a multiplicity of insults may hasten it. This increase of potential gives rise to a certain irritability which always lies at the foundation of every epileptic character. Another constant is instability. While the extreme *irritability* (*Hack Tuke*, *Bucknill*) is rapidly transformed into impulsive acts, against others or one's self, the *instability* makes of the epileptic a being who is capricious—in the morning perhaps, lively, gracious, enthusiastic, satisfied; and later in the day, sad, despairing, disgusted with life, depressed, religious (*Clouston*, *Schüle*, *Falret*). There is therefore a veritable specific epileptic character defined by the variability and intermittence of mental dispositions. Whence proceed these tendencies toward rupture of the mental and moral equilibrium? Having discussed heredity as the source of this character, the author asks how may the latter be recognized? It is betrayed by intense affectivity, by a real failure of the moral sense. Candidates of epilepsy as well as actual epileptics are egotists, distrustful, irascible, violent, impetuous, malicious, knavish, with exaggerated or simulated religion and piety, and prone to excesses. Their moods are bizarre, contradictory, subject to frequent and rapid changes. These unbalanced persons whose dominant note is irascibility and irritability appear as the incarnation of vice and cruelty. In all cases, the moral sense is almost constantly attacked as shown by egoism, indifference to the rights of others and absence of remorse. The homicide has not a word of compassion for his victim. Crimes are done with the greatest cynicism and cold blood. The murderer remains near his victim or goes about his occupation as if nothing had happened. The child who is to be an epileptic is vicious, already irritable and impulsive. His motives are futile, he isolates himself or runs away, and has sombre ideas. At the slightest reprimand he speaks of suicide, or absents himself for days after a chiding.

He is sexually precocious, an onanist, has night terrors, somnambulism, etc.

In his work on mental affections, *Macpherson**, states in regard to the make-up of the epileptic, that the general mental state is distinctive, although many during the interparoxysmal period seem quite normal and attend to their business affairs. Even in the "so-called" insane and degenerate epileptics the intervals may show but these same oddities and eccentricities of conduct, want of self-control and instability of emotions. Most of these cases are hypochondriacs taken up entirely with themselves, their bodies, etc., and also their passions, feelings and sentiments. They exaggerate mild ailments, constantly demanding attention. They are usually vain, self-laudatory and narrow-minded, although at the same time usually obsequious and agreeable. While kind and sympathetic with one another, especially when their fellow patients have fits, they also quarrel fiercely among themselves. They mostly profess religion and observe its forms ostentatiously, and many are really sincere. Their characteristic is also seen in degeneracy as is also egotism, etc. Nearly all are passionate, and when angered are furious. They have no self control and hence indulge in alcohol, sexual excesses, indecent behavior, etc.

Anyone acquainted with the well-formed peculiar mental characteristics of the frank epileptic in institutional life will easily recognize the classic description of the epileptic make-up as given by *Pilcz** when he states the following:

In relating anything the epileptic is never diverted and always arrives at a conclusion. He repeats the same story in the same language, and makes free use of commonplaces, proverbs, and biblical texts. As a rule they are pietists, observe religious duties scrupulously. Their devotion is at times exaggeratedly sweet. They flatter by frequently prefixing "good" and "kind" in addressing others. In striking and characteristic contrast to the foregoing is the unusually marked irritability, sensitiveness and egotism. The patient who assures "his dear doctor" that he will

*Macpherson, "Mental Affections," 1899.

†Pilcz, "Lehrb. d. spez. Psychiatrie," 1904.

remember him in his prayers, will insult him by word or deed if he thinks he is being slighted in any way. They are almost pedantically methodical in institutions, to which they bring all their knick-knacks and presents, which are carefully and neatly packed. These they carry with them and keep, moreover, a sort of inventory. Handwriting is painfully correct, ornamental, old-fashioned, etc.

Finally, we may cite the views af *Hübner* who, in a careful analysis of the mood or disposition of the epileptic, states that as a rule these set in with no disturbance of consciousness. The patients seem out of sorts, taciturn and isolate themselves. If one makes up to them they are gruff, and refuse to respond. At the very first opportunity they pick a quarrel with someone. In institutions they complain of the food, demand their discharge, behave disagreeably to other inmates and keepers whom they regard as prejudicial to them. The facial expression is gloomy and repellant, and they are restless and on the go. This spell may be a matter of hours or days. After it has passed the patient gives a good account of himself, says he has been ill, how everything trifling was able to irritate him. Therefore it was only natural that he should behave as he did. In milder cases the subject is merely sad and depressed. His capacity for work is diminished but he does not react to his environment. Doubtless suicide is determined by these moods. During these periods of moodiness and depression some epileptics seek to benumb their feelings with alcohol, but bear indulgence in it very poorly. Much more rarely we see cheerful moods and a diagnosis from mania is then not easy, as the patients laugh, sing, joke, talk incessantly. One patient also exhibited himself. These moods may stand in some relationship with a seizure but are also independent phenomena, and separately described. The author, by the way, claims that true dipsomania occurs chiefly in epileptics. Aside from moods, fuges, twilight states, etc., there is the slowly developing alteration of character. In the author's experience this is encountered in from 90 to 95 per cent of all epileptics. The epileptic as a rule does not lose his power of orientation of time, place

*A. H. Hübner, "Lehrbuch. d. Forensischen Psychiatrie," 1914.

and person. There is a slowing of thought, which seems to give rise to the very careful circumstantial accounts which are held by the author as evidence of general (?) defect. Despite this carefulness the epileptic does not express himself clearly. The judgment is always defective in advanced cases. Memory fails both as to the long known and the new. In the character of the epileptic two qualities dominate. One is the strongly marked egotism which permits the patient to think only of himself and never of the rights of others. The other is the inclination to piety, which plays a great rôle in the thoughts of the epileptic. The patient prays much, occupies himself with religious problems (which he does not in the least understand) and tries to convert those in the neighborhood. They have God much in the mouth, not often in the heart. Love of neighbors vanishes as soon as egotism comes to the fore. The epileptic is a liar, consciously or unconsciously, and is very distrustful. He is rarely cheerful, quiet and approachable. In the main he is easily irritated, gloomy and distrustful.

In accord with the main tenets of the views given in the foregoing transcripts one might cite a number of writers such as *Esquirol*, *Bischoff*, *Clouston*, *Ball*, *Russell Reynolds*, *Magnan*, *Howden*, *Romberg*, *Rosenthal and de Fleury*. However, I think it may be considered proven as far as opinions and observations of the chief investigators of our subject are concerned: (1) There is a more or less constant affective defect in all epileptics, sane as well as insane; that such defect is due to an inherent make-up of the psyche in which mainly an egocentricity and a highly sensitized feeling are given to the individual; and that from this constitutional make-up or alteration the ultimate deterioration of the psyche, intellectually as well as emotionally, is gradually developed, step by step, and if the state is not corrected that this finally and logically ends in so-called epileptic dementia. (2) The epileptic alteration is seen to proceed from the mental make-up or constitution of the individual epileptic long before his malady reaches the convulsive stage and that the one is but a further and final unfoldment of the former.

Lest it may be considered unfair to present only the predominant and salient psychic fault as shown in the epileptic constitution, I may mention also that the so-called physical stigmata of the epileptic make-up may be found in these individuals who have epilepsy in later life. One must bear in mind, however, that clinical and pathologic studies show such somatic defects to be most frequently absent in any large series of cases and that the physical defects therefore lose their etiologic significance in the after coming epileptic reactions which are shown in seizures. Again, it has been urged that even though there be no gross organic defect in the epileptic make-up the general functional incompetency of the epileptic economy may be demonstrated. Even though this view be enlarged to include the finest methods of clinico-pathologic research we find no adequate etiologic ground for the seizure phenomena in a majority of all cases of essential epilepsy. We are therefore thrown back again upon our original contention that the fault in the constitutional make-up of the epileptic is psychical and can be demonstrated in every case and that somatic defects, when present, are but contributory to the production of the fit phenomena in later life. That is, the main fault in the psycho-biologic defect is in the psychical sphere.

I shall now undertake by brief citation of case histories to show that the rudiment of the epileptic constitution exists not from puberty, but from the *earliest childhood*. I shall then show how the possessor of such an inheritance finally evolves into the frankly established epileptic and that the fit mechanism becomes a necessary corollary or sequence of such an individual inheritance. I shall present as briefly as possible the mechanism of attacks in the paroxysmal or periodic cycle of the disease in a few classic cases. In subsequent papers I hope to indicate the immediate and remote therapeutic principles that may be employed against attacks in particular cases, and finally give a general plan for a more exact study of therapeusis for the disease in future.

CASE I. The notes of the first case are those of a young girl of 22 years of age who has had grand mal attacks since her 18th year. Petit mal have occurred at varying intervals of weeks and months since she was 16, and occur with undue excitement, annoyance or any excessive stress. She feels irritated, then sullen and depressed, and then "something bursts through," and an attack occurs. The grand mal attacks are but a further and more intense elaboration of the petit mal. While still unconscious or confused after an attack she talks baby talk and acts like an infant, cooing and petting her mother's face or arm, and often says: "Mumsey, I wants dinky." She then snuggles down in bed, often assumes the fetal position, drawing the bed quilts tightly around her and over her head. Tongue-biting and passing urine often occurs and the usual symptoms of a grand mal attack are present. She suffers no apparent intellectual impairment and has produced artistic works of considerable promise and worth. Ordinarily she would pass current in society as a refined and cultured young lady. We shall now note how the inherent instincts underwent development and what part they play in the attacks above outlined.

As a child she was self-centered and early had definite set views on just how things should be done. When she could not get her way she got square with the states of irritation by day dreams and fairy tales. She never got interested in things and kept at them. She had a very lively temper and was not sociable, preferring to be by herself in her dream world. Life in a large city oppressed her and she felt fearsome all the time; in a few years she moved to a small town where her family were the principal society folk of the community. She lost much of her outward irritability and became more sociable, dreamed less and seemed more willing to direct her interest and energies into better efforts to "grow up" and get an education. She began to have better health, there were less headaches and she slept better. However, the dream world of greatest satisfaction was ever her refuge when she became irritated or repressed; she soon began to transfer the useless wonder-world of fairy tales to

that of poetic composition and story writing. The central themes of these stories were mother, childhood, the sea, and the dream fancies of infancy. Soon she grew openly antagonistic toward the mother and her authority. She could not bear to obey her and yet in her fancy she day-dreamed and wrote of an ideal and harmonious relationship between mother and child. She says: "My mother is English; she is very set and stubborn and never acknowledges her mistakes even though the argument is against her." To meet this situation our patient often selects two or three points that are in her favor and thus "saves her face" by such argumentative subterfuge and she finally declares: "You see I am right after all." As regards her literary work, which began in her 12th year and was discontinued when the epilepsy finally broke out, she says: "I wrote largely to relieve my feelings, bruised and harassed by an uncongenial and unsatisfying environment. Then when the 'stuff' worked itself up to a sufficient satisfaction, I got it on paper and felt relieved and satisfied." Then, with a show of keen insight, she says: "You see I can't write any more now that I have attacks; the attacks let it all out of me so I have no themes or things worth while to say."

Just before the grand mal attacks came on she made an effort to sublimate the increasing demands for expression by physical activities but she was naturally lazy and sluggish from childhood and this effort failed. She grew more morose and distrustful, and her shyness and unsociability became marked. She says: "I began to see that the close and intimate harmony with my mother which I desired and which I tried to sing of in my poems was all foolishness and I went into open revolt against my mother's plans." Since this independent attitude asserted itself the mother, not knowing of the various internal struggles and incomplete satisfactions of a make-believe life which the daughter had led, insisted more fully that she should give her her confidence and respect. The daughter could not do this and the fragment or wraith of a former poetic harmony disappeared. She then became definitely outspoken in her antagonism to the mother, had "fits of temper," sulked and hid herself

from society. She became fond of argument and attached much importance to her position and views; she grew pedantic and set in her ways and wouldn't take on a college training as the rigid life of obedience and acquiescence fatigued and exhausted her. The irritation increased, she had fearful dreams, and headaches came on daily, except on Saturdays and Sundays, which days she spent as she pleased. She could not adapt herself to the college work and finally had a severe grand mal attack and then was quite all right again for a time; but slowly the old irritation came back. There were days of annoyance which were followed by "blue" periods—a state in which she was not particularly depressed but in which she seemed to suspend a consciousness of her environment. She did not talk, read, or do anything, yet could be easily aroused from the lethargy. Usually these "blue" periods were later broken by emotional storms of temper lasting two or three days, or she had attacks, after which the mental skies were cleared for a time. It may be said that just before the first grand mal attack at college she had been very homesick as well as unduly "badgered" by the exacting college discipline and that after the grand mal attack while still in the automatic state she fled from her room screaming for her mother.

So often one hears, on the one hand, that epilepsy is a specie of feeblemindedness, and on the other, that many epileptics of great ability lack nothing in the make-up of the normal individual. The following brief history is given of a man of 36 years of age who is one of the notable inventive genuises of our time:

Case 2. Our patient was born a delicate child, the youngest in a family of six. He was a "crying, difficult child." He had teething convulsions during the first year of life. He was always keyed up, slept poorly, talked and walked in his sleep. At school he paid no attention to the studies he didn't like. In his own description he says: "Literature and the sciences simply didn't exist for me." Everything in regard to mathematics and the mechanical world were attained without effort. At 11 or 12 our patient,

sensing that the father intended to have him study his profession of law, flew into a sullen temper and left home. He lived a nomadic life for three years, during which time he wandered away into other countries and elaborated his various inventive ideas in the mechanical field.* A clever capitalist found him in dire poverty in a foreign city and from that time on our patient came into his own. He grew up to be a resourceful but "peculiar" young man. For instance, he has never read the daily papers, has never voted, nor taken any social interest in the world. He is naïve and childlike in all his enjoyments. Long before his epilepsy developed he had gradually lost all contact with the world of reality aside from his particular inventive sphere, and had he kept to this field exclusively he probably would not have developed an epilepsy. But four years ago business conditions required him to take an active part in the practical introduction of one of his greatest inventions in a distant city. There he was on call day and night. The whole scheme was on the point of falling through, and he became irritated and harassed. Then, too, he had to handle business conferences and social associations for which he had no training or aptitude. In one of his intensive efforts to manage a business conference and while under the greatest tension in explaining his mechanical apparatus to the group, the "fatigue state and irritation came over him like a nausea" and he had a momentary lapse of consciousness in which he says: "the little wave was but a few seconds in duration, but it was very blissful while it lasted and had I not soon learned the nature of the difficulty, I should have considered it as satisfying to me as a short nap." From this time on it was only a question of fatigue and stress, particular business reverses, or other various occasions of irritation, to bring on frequent petit mal or absences which finally broke out as grand mal attacks two years ago. Our patient has had peculiar attacks of absences one of which I personally witnessed. He was in the midst of a several hours' intricate exposition of one of

*It may be said that at present he has some fifty-six patents, all practical, some thirty of which are in actual use and of great economic importance and value

his inventions, when, without other appearance than that of fatigue, he had three or four absences or petit mal which in no wise interrupted his explanation and following which he continued his discourse with even greater lucidity. I was looking directly at him at the time and I knew of the "sensations" only when he told me about them afterward. He said: "It was as though there were an instant of eternal calm in my mind. I had a sense, however, that I was automatically continuing the long sentence I had just launched and that it moved on by itself; before it was finished I was back on the line of thought in time to keep the full trend of that which was already started in the argument going without a break." Occasionally when our patient works continually in his private laboratory for four or five days, making perfect or "fool proof" some of his most intricate mechanical appliances, a sudden irritation and anger at the stupidity of his assistants comes on with a hurricane fury and he brushes them all aside or drives them outside and then makes an attempt to do all the work himself. At once he has eight or ten sensations, and immediately he feels calmed and quieted. He then becomes patient, kind and considerate, and again permits his workers to co-operate with him. As is not uncommon in the genius or creative world, our patient dreams a great deal and gets many of his inspirations for new patents from dreams or the twilight state just after waking. "Awake or asleep, I am but in the different working levels of my inventive mind" he is fond of saying. Again, he says: "In the 'dizzy' turns people seem to move with accelerated speed (*sic*), and the people seem a bit unreal in such activity. Of late the 'turns' are a little disagreeable inasmuch as they lower the mental tension although they calm my thoughts. Several times I have looked at myself in the mirror when I am having an attack. I appeared perfectly normal to myself, with the exception of once, when my face was very red. I feel a sense of elation and exhilaration when they come on and can feel it all gradually subsiding in my mind. I frequently work two days without sleep." With an intensely illumined room and plenty of water to drink he works on uninterruptedly. When

intensely absorbed in his work he is fully oblivious of time or surroundings. One may summarize his character in that he is egotistical and supersensitive, though simple and naïve. With the inrush of disturbing reality he has an epileptic reaction. Kept free from the latter, under moderate adjustments of work he is free from attacks of any sort for months. It is unnecessary to say that our patient is extraordinarily difficult of control; he simply "forgets" rules and regulations of every sort, and says "I must be allowed to go to the devil in my own way."

Many epileptics appear for analysis and diagnosis wherein it is not possible for one to get a good detailed history in its finer setting. Again, many facts are often lost in a precise understanding of the make-up and the causes leading up to the epileptic reaction. One must often, then, be content with the feeling that the situation might be made to yield much more than the surface examination shows had one the whole set of facts. Not being solely intent at this time in making a special thesis in this paper I have selected the cases here reported somewhat at random to show that when all the data are not at hand one may suspect that the full set of facts would make the analysis very clear. The following case was sent me in the belief that it had none of the make-up of the individual epileptic, nor did the family history show any of the psychic taint or predisposition which would throw light on the occurrence of epilepsy in the individual patient. All the data I am to report were taken in a single interview and given without leading the patient or mother to the set of facts that they gave.

Case 3. The case is that of a boy of 18, who has had grand mal attacks monthly since the first grand attack at 14. The paternal grandfather had a lively, ill-repressed temper and often drank to excess; the father was nervous and irritable, and "didn't agree with anybody very often or long." He was called a "dissatisfied man" and had a roving disposition in search of the perfect job. He drank to excess, and was very "difficult" in the family. Our patient and the father resembled each other strongly in physical and temperamental make-up. The boy showed marked prefer-

ence to the mother; he and the father were always at "sword's points." Our patient is the second in a family of three, the oldest brother having died in convulsions at 6 weeks. The infantile and childhood development of our patient was quite normal except it was noticed that he was stubborn, took correction badly, could not be driven, and was very sensitive. He was the only child until 6 years of age and "made the most of it." At school it was found he was not tactful or diplomatic. While not quarrelsome he just walked away, "threw up the game if it didn't go right." He played in few games in which he was not the leader. He was of a naturally cold disposition. All his innate traits of temperament are quite the contrary to those of his younger brother. He became a day-dreamer early and grew up "hypersensitive and gloomy like his father." From what may be imagined, it is easy to understand that he took his father's death "bravely." The father had many convulsions at his death from tuberculosis, some two years ago. Our patient got rid of a good deal of irritation after the father's death and the attacks were better than for some time before. He went several months without a symptom. At 14 he tried to do work in a store and also keep on with his school; he got behind in his studies, lost a year and this got him very much irritated with the store work. He hated it, but stuck to it until the nervousness and insomnia caused him to walk and talk in his sleep. Then he had a grand mal attack at the end of a sleep-walking period. He says: "the stress of the work was too much for me; yet I am continually irritated because I can not go on and realize my ambition in life, and this seems to make for more attacks." The plan of treatment in such a case is obvious.

CASE 4 is that of a man of 45, who has had grand mal attacks five or six times a year since he was 14. They began with petit mal attacks which are now of weekly occurrence and consist of "flashes of light and a feeling as though wind were blowing ever the entire body." Then there occurs a vague sense of past scenes and reminiscences of childhood, and he becomes unconscious. Still more recently under difficult circumstances and harassing diffi-

culties, as an attack came on in his sleep, he was heard to sigh deeply and say: "The day is o'er at last."

The boyhood setting was peculiar; everything was done for him; even cake was placed in a dish beside his bed so that he might eat during the night if he should awaken hungry. Finally, the mother passed her "spoiled" boy over to the care of his wife, who has apparently been spoiling him ever since. As a youth he learned easily and graduated well in his college class at 21 years. He had few playmates as a boy, was self-contained and preferred to stay at home, where he had his own way. There were no particular conflicts called up until later life. When irritated and annoyed he took himself to his music room, where he "played it off on his violin." He was an egotistical and supersensitive boy and was handled "with kid gloves" by his parents. When things went wrong his recourse was to his violin and sombre music. He was very stubborn when crossed and it is said that he underwent quite a conflict just before his first attack, when he was finally given a piece of cocoanut pie to quiet him. He was stubborn and resentful and never got square with a boy friend if he once quarreled with him. He was always over-precise and wanted things in their place and "placed in a box." He was rather cowardly and given to self-pity as a child. He day-dreamed the most of his childhood. It was said by admiring relatives that such states showed that he "thought deeply," little knowing how deep. When he had to stop the rather idle, easy life at 14 and get ready for college he could not take up his violin there and he found "no other way to get square." He was never cheerful, always quiet and often taciturn. He craves sympathy and has never really gotten over longing for his mother, now dead a score of years. At 14, when irritated, he would flare up and then become sullen and frequently would not speak for days, staying by himself in his own room. Hypersensitiveness is a marked trait in the family; an older sister is so to a marked degree, and is also occasionally epileptic after fits of extreme anger. The supersensitive members of the family are all absent-minded. One cousin used to go away to the city forgetting his wife

was to go with him (they are now separated from each other). In early life our patient was abnormally ill at ease with the opposite sex. He had but one love affair, at 26, and it was reported that on being jilted it "nearly killed him." He used to cry all night. He was over anxious and irritated during the whole engagement. Attacks were frequent before the break but none followed it. It should be stated that the patient had great difficulty in repressing masturbatic habits at 14 and this increased the inner tension, irritability, headaches, etc., until the attacks seemed to "enable him to get square with the insistent longing of his sexual desires."

As might be expected, the possession of an epileptic constitution must be found to vary in degrees in different individual epileptics. In the worst adapted individuals the epilepsy develops *pari passu* with the first impingements of the child upon his environment; in such one may find no trace of conflict or struggle, as we know it in an adult sense, the conflict may even be below the threshold of conscious life as shown in a nameless dread or a general irritation against the simplest demands of instinctive life. In such, one often sees the simplest accidents of fright, or even a startle from quiet sleep or the induction of a cold bath, may cause a loss of consciousness and a convulsion. The internists often designate such children as spasmophilics; either congenital, or acquired soon after birth. If one bears in mind Preyer's elaboration of the psychobiologic conflicts the healthy infant may pass through, how immeasurably greater must be the difficulty of those children handicapped by poor adaptions to the stressful life of the nursling period before a subordination of the impulsive life of the child is attained. The obverse of this is also true. There are many individuals who successfully survive the perils and pitfalls of overwhelming conflicts during the infantile and adolescent periods only to succumb to conflicts in full adult life or even later. In such one needs to research the early life carefully to determine whether the epilepsy of later life is really an instance of essential epilepsy or one of symptomatic and organic origin. It may be interesting to show the make-up and development of such a case in which consid-

erable doubt was entertained as to the essential character of the disease until the case was thoroughly researched.*

CASE 5. A man of 67 years of age, who was referred to me, had had infrequent attacks of epilepsy since his 43d year. A cursory examination revealed no epileptic make-up. The physical examination showed our patient to be a slenderly built man, so well preserved that he appeared to be about twelve years younger than he really was. There was no arterial degeneration and no physical or functional defects other than a mild degree of constipation, which followed some years after his epilepsy developed, and at a time when his occupation became most sedentary in character. He has had an obsessive neurosis of a classic sort—a fear of riding on railroads—which does not immediately concern us at this time. To research the make-up more carefully we placed the patient under trained observation and the following facts in development were then revealed:

His earliest childhood is unknown. It was, however, learned that at school he found it moderately difficult to learn. He had to study hard, and fretted much over his studies. His standing in school was up to the average but he kept up to it only with great effort. He was especially good in mathematics. His reports were signed by his mother with the statement that she thought the standing "was good for such a nervous boy." Although he was quick and impulsive as a boy, very energetic and under a tension most of the time, he was obedient and never had tempers or rages. He was very sensitive and paid great attention to aches and pains. He was inclined to criticize others, and took advice and reprimands poorly. He liked to form his own judgments. He was stubborn and very set in his opinions. He always had a tendency to brood, to look on the dark side of things. In adolescence, he had but one love affair, which was broken off by the death of his fiancée. It took a long time for him to recover from it and even now he thinks much of it. He has never married. The sexual life was active and not unusual in its history.

*In another paper I shall undertake to show how a patient who apparently possessed no epileptic make-up, yet had two epileptic children, was finally found fully to accord with our theory of the disease.

In middle life, several years before his epilepsy began and after he had been in the government employ, he showed poor concentration, became unambitious and lost confidence in himself. Never having made a wide acquaintance in his boyhood, in middle life the anti-social tendency grew upon him until he was almost friendless at 45 years of age. He preferred to be alone at all times. He then became somewhat quarrelsome and dictatorial and a great stickler for having his own way. He also began to grow suspicious, resentful, easily offended, and held grudges for a long time. He soon became rather jealous and thought the world treated him badly. Dissatisfaction with his occupation and environment came on as he saw no evidence of release from the governmental position he occupied, in which the work was exacting and painstaking and the salary moderate with no chance of advancement. His deeper interests in political and civic affairs began to dwindle and became perfunctory. Gradually he became less frank and open in his confidences with his business associates. He kept everything to himself, as that was the easiest way. If confidence was inspired from without he could still talk freely. He began to doubt the sincerity of all people and contracted his own "never too strong charitableness and sincerity." Finally he began to get the usual attitude of old government employees, that his work was not appreciated, that the government was indifferent and unfriendly to long suffering servants, and he talked of little else than these injustices. (He has now been thirty years in the government's employ.) He became definitely committed to a routine and was exacting about the way he did everything, doing his work in a methodical way. His finicky ways about personal belongings now spread to the minutest details of his work at the office. He was strong in his demands for precision and order in everything and felt relieved and free only when this feeling was gratified. He began to worry and fret when this feeling was not met. An exaggerated demand for truthfulness and justice, especially the latter, began to grow upon him. Gradually he lost the little iniative he had possessed and submitted, but with growing intolerance, to the

"domination" of his superiors. He then began to day-dream and plan how it could all be changed for the better if his superiors would but accept his advice, which they seemed to seek less and less. He lost courage and hope. He became moody all the time as a sort of protection in some way—probably to gain comfort or respite from the growing irritation of his work and his associations. He then began to grow despondent without apparent reason and to worry about his health, which had always been perfect since a young boy. He finally failed to make any effort to overcome his despondency and the fixed mood of dejection became more or less permanent. Soon he found irritability and outbursts of temper were growing upon him, especially under the slightest criticism. He finally lost interest in his work completely, and at last lost all satisfaction in life; he was "never known to smile from one year's end to another." He went automatically to work following a set routine, a "government hack." He then became a "cog" in an intolerable government system which he detested but which he continued to be a part of from necessity. The repression and depression deepened until it was thoroughly intolerable, although he did not openly rebel. He kept the year-long grudges to himself until a few days before his first grand mal attack, when he was suddenly called upon to take up two men's work in mid-summer. He felt he should die from the indignity and humiliation to which he could not object, and he had his first grand mal attack. In other words, he "blew off the accumulation of years." Since then a periodic discharge slowly accumulates every month and he has repeated grand mal seizures. In his prolonged vacations he "feels like a new man" and has no attacks.

I submit that the inherent traits shown in this man passed to their logical conclusion in an early psychic deterioration which occurred long before his epilepsy broke out, and when the sudden and insistent demand of irritation stress was placed upon such a deteriorated make-up, an epileptic reaction was the logical consequence.

Before leaving this case I may say that our patient was born in this city, of normal healthy parents, was college-

trained in this country and abroad; in business life at 23, he went from one unsuccessful occupation to another until the sixth one finally located him in the government employ at about 37 years of age, some six years before his first grand mal attack. He had, however, begun to show the psychic deterioration sketched several years before he entered the government service.

Case 6. A further and more intensive analysis of the make-up and the precipitating psychologic setting in Case VII published in my former report is interesting and worthy of note here. It may be remembered that this middle-aged man had the classic make-up of the epileptic constitution and showed the epileptic reaction only when he was 33 years old, and that he has had but four classic *grand mal* attacks in all. He has now been for nearly two years free from any major attacks of epilepsy.

In researching the dreams after the last report, he had one as follows: He was talking to his sister at home about business and the old controversy. She and he were very aggressive but the patient himself was the aggressor. He was insisting upon his position and explaining it in detail. She appeared non-committal, nevertheless not apparently believing or agreeing with him. A further analysis showed that the patient has a tendency to "carry things on" long after they have been settled. He can not rid himself of business affairs after leaving the office. Invariably he goes back to his own personal feelings in reference to his brother and sister, whose attitudes, either in the dreams or in the waking state always make him feel supersensitive.

In a further inquiry about the gastric neurosis, it seems that the first belching of food took place when the patient was 15 or 16. At that time his father had died and the patient was ready to enter on his work of going into the firm. The sister insisted upon the patient taking an apprenticeship in another business much against his inclination. He disliked the work intensely, and, in his words "the apprentice business didn't do him any good and it didn't have anything to do with the after-work he should take up as a member of the family firm." The sister said, "The busi-

ness doesn't warrant our having to pay you a salary when you are doing no service to us," a statement which the patient has never been able to forget.

A few weeks after this apprenticeship work was undertaken he began to belch food after the evening meal. At such times he felt rather depressed, annoyed, irritated, and the accumulated "cussedness of the day's occupation" was very nauseating to him. He could not express his views to the sister and this intensified the heaviness of his stomach and the feeling as though he wanted to retire within himself.

At times he thought he really should submit and be sympathetic to the family views, but he "could not really feel it." There was a great deal of conscious repression withholding his very definite views that he should be allowed to be independent, but nevertheless as it had been decided upon that he should stay at his work he kept at it, day by day, always with the feeling that he was doing so because he didn't want to hurt the feelings of the family, the older sister in particular. At the same time he had an idea that he might be oversensitive about the matter and that it would work out satisfactorily in the end, but during his entire apprenticeship he was never able to get his mind reconciled to the enforced occupation in the firm where he had been apprenticed.

The patient admits that he always resented correction as a boy, especially about any personal behavior. The whole family is inclined to be critical and rather severe upon the conduct of the other members of the family. When he was corrected as a child he usually refused to comply. Although he thinks that the criticism was unmerited in boyhood, he felt the same whether it was or was not. The patient and younger sister were frequently held up to personal criticism and to behavior and conduct to which the other members of the family didn't comply. Even though he thought the demands were just, he always felt as though he didn't get things "out of his system." He felt a resentment, was sullen and irritable. He thinks the intensity of his objection to criticism steadily increased by his apparently not

resenting it openly. A part of the more coercive aspects of the criticism disappeared at the death of the father. There was a sense as though his personal rights had been transgressed and a part of it was also his natural dislike toward being coerced in any way. He would carry this sense of being wounded and disliked for several days. There always remained a "nexus of hurtness and dislike." He usually made no particular effort to get square with these unpleasant affects but went away by himself, then resorted to reading poetry and engaging in some music. After such a direction of interest he felt physically much quieter and let down. By not meeting things openly he thinks he produced a sort of "subconscious sensitiveness," but in time he reacted openly and felt relieved by it, though he has often still felt that the discharge was not up to what the affect should be.

It seemed to matter little to the patient what the sister's attitude might be at the time of explaining why she demanded a certain type of conduct. Her unchanged attitude of superiority made him much more indifferent to any pleasurable situation she might initiate in any social way.

A free criticism monologue, of the doctor, runs as follows: "Possibly you think I am supersensitive and that there is an undue desire for harmony and sympathy, which is probably something at the bottom of my lack of real active social intercourse and this in turn has made me extra sensitive. I do believe that I lack the make-up to see things as they really are and you may think that I lack something of maturity sufficient to my age—that there is a lack of grown-upness in my make-up—that you think I am not flexible and am inexperienced; but I am not really lacking in experience, as experience would not necessarily change my personal attitude; so long as my personality is as it is, my view on life will not be essentially changed. Further, I look at things more sensibly and evenly than I did, especially eight or ten years ago."

"I haven't been essentially changed as regards my character by the doctor's impressions, although there has been

a decided relief in the talks. There is just as strong a feeling of lack of sympathy in the family, and dislike toward the sister, as before; but my mental emotions are less buried now and find easier expression and are more easily freed. My general adaptability and mental agility have improved; in other words, I find it easier to relieve my mind. This is greatly helped by my talking things over with my wife. When I am free from the self-consciousness, I am quite a different person; I am not so detached from society."

"I really think that the doctor is not quite frank and still looks on me as something of a child. The doctor has not told me what he thinks, but has a mental reservation as to whether my years are sufficiently full of experience and I think his attitude is a slightly derogatory one. I feel this at times, but not so much as the doctor seems to imply. There is a something neglected in his expression of what he thinks which is constantly persistent. Sometimes it is more and sometimes less. I think that this is largely born of an idea of self-superiority and possibly born of insight and knowledge. It may not be so, but it seems evident in his manner. I also think that the doctor believes I am unusually susceptible to flattery. His belief is somewhat analogous to that which my sister has. Occasionally, I talk all these matters over with my wife and she blocks me in expressing them and says it is too deep and not to be talked of."

For many months before the epilepsy began the patient had an unpleasant sleepy feeling about 8 P. M. after dinner. If the social situation is rather interesting the sleepy feeling is much curtailed and is often absent. Oftentimes, while reading the paper he feels a sudden general fatigue, a sort of brain fag. His head feels heavy at such times, and there is a burning sensation in the eyelids. He feels this sensation much more when he is mentally relaxed and it often lasts until he goes to sleep. When no one is at home dining with him he often sleeps from 8.30 until 7 next morning. If he is allowed to sleep for two or three hours at the time when this lethargy is on he becomes quite all right. Ordinarily, the dullness at this time contains a feeling that the state is

dreamless. When this lethargy is on he makes little effort toward keeping up his part of the conversation, and he gets only snatches of it as he arouses himself at different times.

At such times he is rather irritable and sullen. Sometimes he is rather ashamed of this disinclination but he finally loses any sense of shame and lets himself "drift off" in this semi-conscious reverie. He feels then as if he goes off into space, as if he were still conscious of something about him and knows where he is and what he is doing. The whole sensation, however, is entirely different from ordinary sleep, "something like taking ether or narcotics."

Further inquiry shows that this detachedness from reality and the states of lethargy are but heightened states of subjectivity in which the inner life dramatizes itself, somewhat like day dreams and the states of mental abstractions which are common enough in those not epileptic; but that which gives them a distinct pathologic import is their unmanageableness—the slipping away at times from conscious control at the behest of something in him "that demands" appeasement, in other words an *unconscious demand* makes itself felt and he has an epileptic reactive setting of an otherwise common enough everyday abstraction (minor automatism).

A dream in which the family conference was on again took place on another night. It all concerned the friendly attitude regarding the former disagreement; previously the patient had rather sensed in the dream that something of an unfriendly situation was to be brought up. It had come to a climax at last where the sister's husband was actually coming into the business. Our patient was outlining conditions under which the new partner would enter. Another "trivial and not fully remembered dream" was something in the manner of an explanation being in progress after a sleep which was begun at midnight and the patient awakened at 5.30 and could not go to sleep again. Something of the old fright of an attack seemed to be present in the sleeplessness that followed, but there was something in the dream state not decipherable—that was not dissimilar to the old controversy. Later, analysis brought out that the situation was that of the old controversy situation with the sister, and her husband was present also.

Thus one sees here the impossible reconciliation is not allowed to lie dormant and unsolved. There can be no common truce such as one usually makes with the necessity of life problem. Undoubtedly the motive that drives our patient ever to seek for final peace and harmony is his extraordinary sensitiveness and the nuclear egoistic desires that no appeasement will be accepted short of full accord and harmony; for it would appear that he has an *irreconcilable* attitude toward making life adjust *precisely* to his views and that while he may suppress his inclination to make his views known, yet he is not able to forgive, there is an inability to transmute the hate and dislike into that of forgiveness and love. He says "this can not be done"—that the Old Testament concept "rules the world" and that he probably "will have to continue with his disease if this is required before he can recover." Yet he admits that he is more flexible, adjustable and is taking more satisfaction in life, getting a larger scope for his output of energies, especially his emotional feelings—the real basis of treatment in such individuals.

In the reversed order of their genesis, we have attacks, a gastric neurosis, supersensitiveness, day dreams, abstractions, and essential self-sufficiency and egotism. While the patient feels supersensitive to the adaptation which he requires of other people, he doesn't permit the same latitude of feeling to others as regards his own conduct. He thinks it would not be possible for him to take the initiative in friendly intercourse with those of his own equal standing. He is quite *en rapport* with his wife, whom he recognizes to have a diametrically opposite personality as regards sensitiveness. Toward no one else in the family or distant relatives does he feel the same, his grandmother excluded; he believes she is absolutely unselfish, but then she is the counterpart of the ideal mother (the mother imago).

On going to sleep the patient frequently "starts all over," and occasionally makes irrational statements such as: "What are you doing?" "No you won't." But the latter are frequently made independent of the jumps or starts. There is a sensation when the jumps are made as though it

immediately sprang from the epigastric region and on fully waking there is momentarily a sense of nausea and disturbance of the proper feeling, which latter is not dissimilar to that which exists a great deal of the time by day. The last six months there has been no "disturbance of the surroundings" or other peculiar feelings after dinner.

At the time the evening sensations or lethargies were at their classic stage, some three years ago, there frequently was present before the eyes a bluish tinge in the air, of a Japanese blue tint. This would last for two or three seconds only, and often recurred two or three times in a five-minute period; a possible explanation of a dimming of consciousness of psychoanalytic importance.

The phenomena often occurred every two or three months in rather set periods. Often at these periods there was a desire to have people about, not because they gave sociable intercourse—it was rather quite to the contrary—but their continued presence would give the desired resistance necessary for him to exert his will to keep a perfect state of consciousness, and he wished to have them present so that it would keep away the fear of a real lapse in consciousness. Obviously, there were two kinds of motives acting, one perfectly conscious, to retain consciousness and ordinary mental activity, and the other, an unconscious one, to draw the patient into a state of unreality, away from his surroundings, into a different scene.

Previous to the sensation the patient often had a sort of nightmare attacks in which he thought he was in different surroundings, "like a dream," out of which by an intense effort he was able to force himself to full consciousness; as though he were "unreal and dead," and that there was a struggle to get back to reality. After this there was a very terrible feeling, and blueness came with it.

All the phenomena are really connected at bottom and have a constant point of departure from the epigastric region. The sleep sensations were as if one were fighting one's way out of something, almost indescribable. This goes with the blueness.

Sometimes in the past the "mere thought of it" brought

it on and most frequently an effort of the will was able to drive it away. There was always a sense of annoyance and fear.

These "different surroundings" are almost invariably the same in character, not to be described, but as though the patient had been there before, that he had experienced it all in a sort of dream in which he was the center of the scene, as if it were something that once transpired but was not consciously remembered. It was like a dream-state, yet subject wholly to conscious review. The agreeable scenes and happenings in these unusual surroundings were connected with something that had taken place, or "might take place." There was often a sense as though people were about as in a dream. The scene and visualized sensations were of the character "as though he were in the center of it all, and all things centered about him." The general physical sensation was always unpleasant and distressing when translated into conscious terms or when he was fully free from them. Yet while there they were all pleasant and harmonious.

It is perfectly obvious that the motive of the whole foregoing type of reaction exquisitely demonstrates the unconscious motivation of the whole mechanism of the epileptic reaction, namely, the desire to abolish contact with harassing and fatiguing reality and a desire to regress to the infantile or fetal life of personal pleasure and freedom.

In the examination of our patient's musical and literary faculties, we find that he is very fond of music, dislikes the modern dancing because he finds he is a bit awkward and ungraceful. Now that his violin work is progressing fairly satisfactorily he finds keeping his place on the score and understanding the phrasing melody are rather difficult. He is a little rigid in his bowing, and does not develop the full melody in the harmonies of music. In tests of reading verse, poetry, etc., we find a fair attempt toward giving the full meaning and expression, but there is rigidity in the voice and a certain degree of improper phrasing; the rhythm is a bit jerky and over-emphasized. The poetry in which he is most concerned deals with the philosophy of life, its meaning, tragedy, etc.

As regards the innate feeling of being irreconcilable with people who are radically and fundamentaliy different from him, or where there is a feeling of insincerity in the attitude a friend takes, are all portrayed in the dreams of the sister and brother. His whole phase of reasoning and feelings, either in the dreams or in the conscious state is quite the same now as when a child and has not undergone any essential change. The patient says: "My brother handles things probably better than I do, but still I believe if he were pushed to the extremity that his position and understanding of things would be quite like mine; he has a way of just letting it rest without settling it or coming to any final decision or conclusion about it, *while I seem destined to be forever seeking for a solution and getting the matter satisfactorily ended, and to gain a harmony and understanding of it.* It may be, as you say, that my brother's way of handling things is adult, while mine is still childlike; yet I believe mine to be much more sincere, and to be much the better way in the world."

It is common enough to get dreams, ecstatic states and delirious episodes in the epileptic of all sorts of settings of reconciliation or flights from reality, but the following rather beautiful one is worth giving, in view of the previously detailed history of our patient's firm attachment to the mother imago and the age-long difficulties with the sister. The general setting in the main is so clear that it is not necessary at this time to point out its detailed interpretation. The dream is given in the patient's words:

"Last night I had a peculiar dream, a dream in which a male cousin of mine was sitting at a table in a little wayside inn, in a room next to the café, drinking. Very soon there appeared a beautiful woman who danced about the table and sang. No, she recited blank verse. She carried with her some flowers which seemed to be a wreath, and when she had walked about the table of my cousin, who had himself joined in the recitation, she sat down and drank with him. Then she crowned him and also put some flowers in her hair. Soon it was evident, in this dramatization that they were going through, that she was intent upon making him drunk, and as

the boisterousness increased with more intoxication she led him to propose to her, which he did. Then suddenly it seems as though the wedding festivities had taken place and they started hand in hand down the road, still reciting the blank verse in dialogue. The roadway was decorated with trees, shrubbery and blossoms, the sky was blue, and the whole setting was that of a beautiful spring day. Suddenly across the roadway a fence was interposed, which barred their way. Into this fence a square hole was cut, about the size of a big window. While still reciting the blank verse and acting (although it seemed like real life), they leaned through this window and seemed on the point of falling through. Suddenly the fence disappeared, and in the next setting of the dream the woman seemed to have fallen in the roadway and received a mortal wound. My cousin stooped and held the woman's head and wiped away the dirt and blood stains from her face. She was still reciting to him, but the theme was now changed to a long, full rhythmic metre and it seemed as though she were about to die, and was asking his forgiveness for all the wrongs she had inflicted upon him and the things she had induced him to undertake for her sake. Then she sang, or rather spoke, of Burgnovia; it seemed to be a sort of Altruia, where everything was peaceful and serene, heavenlike; a place of perfect peace, contentment and satisfaction.

"To all this the man replied, in blank verse without rhythm, of forgiveness; and while she was reciting this ecstatic poem I felt thrilled, and as though it were something which I had once known myself but had forgotten, and I began to recite with her the exalted words in the poem dialogue. Just then, at the height of the ecstasy of the words which thrilled me intensely, she arose from the roadway, and the play dramatization was at an end. I awakened with a start; I felt thrilled and ecstatic and absolutely sleepless the remainder of the night. It was 3 A. M. when I awoke and I remained wide awake; I was blissfully happy and contented all the day and could still repeat the theme in the dream, which was still ringing in my ears. Otherwise, during the day everything was the same as usual, and I felt quite well."

Thus we have a reconciliation with the sister and something deeper, plus the "heavenly flight" from all the "earthly sorrows."

Relative to the first grand mal attack that the patient had six months after marriage, there were many situations of adjustment at the time of getting married which disturbed him considerably. After about two months of marriage a trip to Europe was proposed, largely at the instigation of his wife, in which plans our patient acquiesced and he prepared to arrange for the trip, although at the time he was still somewhat perturbed over the older conflicts with the brother and sister, particularly the sister.

As the time drew nearer for the sailing, the patient felt an increasing feeling of tension and a sort of nameless dread and fear took possession of his mind most of the waking period. This fear was not in reference to crossing the ocean, but the possibility of illness of his wife or himself while abroad. He had "inwardly a very strong desire not to go," but the preparations went on from day to day and he began to feel under greater tension and inward disapproval of the whole project. While he had made his adjustment to his wife's manner of living and thought and feelings, he thought that she had not quite adjusted to him.

He remembers no similar fears except when he was a child, and this brings up the old associations as a child; the sister had a tendency to make light of such latent fear rather than treating the matter by a simple process of talking it out. The "mother-attitude" was lacking in this as in other situations previously outlined by the patient.

The night before he was ready to sail he felt restless and ill at ease, depressed, with a certain aspect of forebodings and also of annoyance that his wife failed to comprehend the real reasons why he didn't look with more favor on the trip. The suggestion had been hers and it seemed as though she had not quite caught his views, about what might be worrying him. Had he taken the time, as he says, to explain to her, undoubtedly she would have appreciated his position and probably modified plans to suit him. In the patient's words, "the anticipation was as great as actual

realization, and with this idea in mind I went to sleep. I felt rather ashamed that I was so hypersensitive about it and so little able to get the mastery of myself." During this night he had his first grand mal attack.

When the patient was asked in what relationship he saw the foregoing in relation to the attack, he said: "The attack was an evasion of my mind from going on the trip."

To any one who has followed the inherent epileptic types of defects of instincts and their gradual unfoldment into the adult character, the gradual formation of day-dreaming, mental abstractions, lethargies and dream episodes, the "starts" and partial dimmings of consciousness, all of which are motivated by the same unconscious forces, one may wonder where the epilepsy really began. If one desires to mark its advent by the occurrence of definite seizure phenomena, then it is clear when our patient contracted his disorder. But if one takes the view of the newer clinical researches, one finds that such an epileptic as outlined here has always had epileptic reactions and will probably always continue to have them in some form. Obviously, the definite episodes of petit mal and grand mal can be fully eliminated if the psychobiologic habits of life are properly adjusted and the environmental stress does not suddenly become too severe and demanding. The mystery of frequent relapses in the epilepsies becomes no mystery if one views such cases in their broader aspects.

Section II.

A STUDY OF THE EPILEPTIC MAKE-UP, THE MECHANISM OF THE FIRST ATTACK, AND SOME OF THE MORE NOTABLE LIFE REACTIONS OF AN EPILEPTIC.

One is apt to forget that the psyche is undergoing development *pari passu* with the physique as a whole, and can therefore see no general application of the adult formulation that the epileptic reaction is a more or less direct outcome of the epileptic's inability to stand the stress and harassments of life from which he seeks automatic or unconscious withdrawal. In a former essay* I undertook to explain how the two principles were to be reconciled. One should not think of the childish conflicts on the same level as the adult ones, but no one may doubt that at their particular level they are as keen and painful as any adult experiences. Common experience proves this to be true. Not infrequently a denial of this truth has led one to think that the child and primitive peoples are entirely free from the ordinary trials of existence, hence the assumption that nervous disorders in children occur on some exogenous or physical basis rather than on a psychogenic one. The more recent studies of the psychopathies of children prove that the numerous disorders of childhood have their origin, not upon a full adult elaboration of a complicated psychic process, but upon the plane of inhibition and control of the impulsive, instinctive, reflex and ideational life of the child or infant. Therefore we might expect that the epochs of new adaptations entailing new and more elaborated forms of stress would be the periods of life in which we would find the most frequent epilepsies to occur. We find that

*"Study of Certain Aspects of Epilepsy Compared with the Emotional Life and Impulsive Movements of the Infant," *Interstate Medical Journal*, Vol. 22, No. 10, October, 1915.

two-thirds of all the epilepsies begin under twenty years of age. Indeed, it has often been stated that epileptic attacks occurring after twenty-five years of age are to be looked upon askance, as not being of idiopathic origin. While of course one knows this is not literally true, yet the fact that the great majority begin in earliest life makes one hesitate to ascribe the essential disorder to any other cause than an error in the developmental life. This being granted, one may note that the period from birth to two years is the great one to which the infant finds the impulsive and automatic processes of life must be adapted. The second stress-period of marked objectivation of the individual child takes place at beginning to talk and to walk. The third is that of the school or community adaptations at five to eight years. The fourth comes at puberty, which is *the* stressful period of physiologic and psychologic separating of the individual from the home ties. This period is the one *par excellence* for the beginning of epileptic reactions in psychopathically endowed children. The enormous demand of social adaptations in work and the marriage relations from puberty to adulthood makes us understand why so large a number of epilepsies develop at this time.

Perhaps the issue is most difficult of acceptance in the infantile period, hence a few remarks regarding this period will not be out of place. In the development of mind, in its simplest beginnings, we note that the actual or potential epileptic child shows bad adaptive tendencies even in the first adjustment called for. For instance, sucking, biting and chewing are often imperfectly performed. Such infants nurse at irregular intervals, they bite and chew their food with gormandizing habits, they slobber and drool, and bolt their food in immoderate boluses. There is often a lack of rhythm and smoothness in movements of the tongue and hands. Such children are often incoördinate and slow in learning to sit, creep, stand and walk. The jumping and climbing movements are awkward and lacking in elasticity. The reflex movements are over excitable, especially in regard to light, sound and contact. They are easily startled. The instinctive life shown in disposition

is without quietude and is filled with unrest in tone or feeling. The extra lability of mood is shown in the meaningless fits of crying and laughing. Finally the deliberative life is motivated by reasons whimsical and lambent, which disturbs the proper development of judgment and will. Similar defects may be seen in simple psychopathies of childhood, but the peculiar grouping of them around the strong individualism and supersensitiveness of the epileptic make-up give them, when thus constellated, the peculiar distinctions of the nucleus of the after-developing full-fledged character of the classic epileptic. So soon as this stubborn and intensive individualism comes in contact with an unyielding environment, like spun glass without elasticity, it breaks into tantrums and rages, crying spells of impotence, and finally into epileptic attacks of a definite character. The breadth of contact with the environment is narrowed, the child soon loses the advantages of physical development, and emotional and intellectual retardation begins. The speech and emotional expression become stiff and woodenish, even though more intense defects may or may not appear. If such defects of the instincts are not molded to normal principles of development the individual child, not being able or willing to adapt, steadily makes larger and larger demands on its environment, and when this adjustment is not forthcoming, the break occurs. Not infrequently a sense of heightened subjective feeling comes with an extraordinary supersensitiveness of the senses; thus one of my little patients has learned to care only for people whose touch she likes, and although but nine years of age, for several years past she has unconsciously classified her acquaintances by the kind and quality of handshake or kiss. Another designates his friends by their individual odors (like a dog). It is easy to comprehend how a dull and inelastic world must disturb such barometric sensitiveness. How prosaic and stupid the ordinary sensate world appear to the supersensitive epileptic, and with what satisfaction he must dream of another world, where all was supplied without even a wish or command. There is little wonder that the epileptic imaginings and day-dreams are

so vivid and real that reality is easily cast off in frequent lapses of consciousness. It is also easy to understand that with such a casual desire to maintain the proper mental tension of interest such an individual may quickly deteriorate in mind and body, and that he carries in his innate personality the forces for frequent severance of contact with reality until the relationship, as MacCurdy has excellently shown, may be more or less allowed to lapse into what seems to the casual observer to be an inconsequential neglect. A complete life study of a youthful epileptic, with the foregoing in mind, is instructive. When one understands such a case in its extreme bearings upon origin, prognosis and treatment of the disorder, the latter holds less of strangeness and mystery and, above all, it clearly points the way for further study of such families *en bloc* to estimate correctly the importance and magnitude of the modern problem of eugenics.

In order to estimate properly the innate defects of instincts which our patient possesses and which will be detailed later, it is desirable that we briefly review the make-up of the family stock. The father was an extremely resourceful business man. His early life was spent in a home where extreme strictness of discipline was maintained. His brothers and sisters left home early and avoided much of the early exactions of the parents, but the father of our patient early learned to repress his own views at home and elsewhere, and grew up largely a stranger to his friends and business associates. He never belonged to a firm, but always carried out his business operations alone and unaided. Outwardly he gave little evidence of egotism or conceit, but "deep down inside" (a favorite expression of relatives in giving the real character make-up) he had such definite and positive views that he was never known to be persuaded to accept any others. His charities and benevolences were of a perfunctory sort, but he saw to it that his contributions were larger and more apparent than those of anyone else. He had the implacable hate of an "Indian," and was never known to forgive an injury. He was extraordinarily supersensitive, yet covered it up by retracting

into himself or by a studied aloofness. He adapted illy to new environments. Wherever he went he must have the same rooms, food and service year after year. This rigid and definite attitude was marked even in early manhood. His wife became easily disciplined to his manner of living, and seemed to have personally contributed to his rigid attitude toward life until he had the home and environmental settings of an "Oriental potentate." At the time of his marriage at 48, his first and only love attachment, he had built such a wall of reserve about him that "hardly anyone penetrated it." His attitude toward the realities of life was practical and matter-of-fact. He took all things seriously and quietly. Never by word or sign did he show that reverses affected him. He never showed that he cared for sympathy or affection. In a large business panic—eleven out of thirteen banks in his native city failed at one time,—he underwent a stressful financial period for three or four years, but he never mentioned his difficulties to anyone except in "a laconic sentence or two" to his wife. Later in life (62 to 65) he displayed some tempers from which he recovered slowly. He never used tobacco or alcohol, never went to public amusements of any sort, and considered time thus spent as a sheer waste. All his life habits were equally set and formed, everything even to the exact folding of a newspaper was according to a system. It was a crime for him or his family to be a second late, and he insisted that the whole household live on the same schedule as he had planned for himself. His religious views were those of an "extremely conservative Catholic," and he despised all modernisms. For years he had sick headaches and "dizzy turns," but they gradually ceased before his death at 68 from arteriosclerosis.

One may ask, why did not a man with such an extraordinarily rigid character have "genuine" attacks of epilepsy? The answer may be made that while he had a narrow contact with reality, it was intense, self-generated, and had continued variations of appeal such as a varied business career ordinarily affords.

Inquiry into the make-up of the mother's family shows that

there, too, is somewhat the same type of inheritance. The grandfather (84 years of age) is a strong, austere man, unyielding and domineering, and "rules everything in sight." The whole family—the mother of our patient included—have great conceit and pride. All the women of the family rule their husbands and have to be at the head of any club, organization, or social affair in which they enter. They are rigid, precise and definite in all their views and purposes. Added to this egotistical make-up they all have violent tempers and "never forgive or forget." The mother says of herself, "I used to have a violent temper myself, with tantrums and rages, but at my marriage at 27 years of age I learned to get square with it by the training my husband gave me, which, I suppose, I would not have taken or heeded from anyone else. After marriage I never flew into a rage as before. Under my husband's supervision I improved all the time. I suppose I didn't have epileptic attacks as a consequence of the suppression of incipient rages because I didn't have time for them, and besides, the rapid appearance of a large family of children made life varied and interesting. Yet I did get headaches and exhausted feelings when the rages were imminent. But after a time they all disappeared, and I became a healthy, happy mother to my six children. Even now though, I find the old rages are deep down; they are rarely provoked sufficiently to rise to the surface—and besides, I haven't got time to work them up." From this statement one may infer the mother has practically corrected in her make-up the potentiality for epileptic reactions by a varied, earnest and continuous outflow of spontaneous interest. She has thus objectivated her intense individualistic desires—a consummation devoutly to be wished for in all epileptics, but which is so infrequently fully attained.

The eldest son of the foregoing union is our patient, a young man of 22 years of age who has had typical grand mal attacks from his 17th year. The epileptic disorder began with sensations, and myoclonoid "jerks" or spasmodic twitchings accompanying such "sensations." The latter symptoms still persist in the mornings before rising and

occasionally recur during the day. It may be stated at the outset that our patient suffers from no physical disability whatever. He has been repeatedly examined by experienced internists and specialists and no physical disorder has ever been found that could in anyway be even remotely connected with the causation or continuance of his epilepsy. His birth was a rather difficult first pregnancy (five uneventful ones have occurred since). The father was 50 and the mother 28 years old at our patient's birth. He was a bottle-fed baby and cried all the time for the first three months. Teething was difficult and began only after he was a year old. He was a fat baby and much constipated. Although he did not cry "very much" after the first six months, he was still restless in conduct and behavior, and very stubborn and demanding. He began to talk at 18 months and made progress slowly and with difficulty; later, at 7 to 9 years, he began to stammer, and had "speech cramps" when excited, irritated or thwarted in his plans or desires. He was not a physically strong child, and appears to have had "latent" rickets and wore ankle braces for the first few months of learning to walk. He was a "dainty" eater, finicky and precise in little ways and made adjustments slowly to the ordinary nursery ethics of the home. He was slow and "difficult" in the kindergarten. Partly on account of the foregoing and partly on account of his stammering, which steadily increased in spite of special training to remove it, he failed to get the regular school training. His power of concentration was but fair, and he was slow in "getting down to his work." He had an aversion to most studies; they did not really interest him and he quickly learned to day-dream a good deal, which habit in its elaborated form will be dealt with again in a more adult setting. He observed well in some things but he often took notice of things in an odd way, *e. g.*, he often noted the stripes and colors of paint on road and field carts, but could not remember who was in them or how many there were. Having little interest in things of an abstract nature, he turned his interest to the concrete and mechanical. About this time (8 or 10 years)

it was noticed he did not make a good friendly contact with his playmates. He became exacting and insistent that his standards alone should be followed. He was quick and impulsive, yet planned well and had a definite purpose, and used tools well as everything mechanical pleased him. He was active and lively as a child and always wanted to build things, but in doing so they must be "just so." He was egotistical yet very sensitive "deep down inside." These two faculties made him rather shy and reserved with strangers. It was said of him: "If he had an opinion and you another, his *must* prevail. He never forgave or forgot a a real injury. He was never tactful, but on the other hand he did not go out of his way to quarrel. If he thought you were doing wrong he would let you know about it in no uncertain terms." While he was obedient as a small boy it was always evident that he wanted his own way, and would try to get it sooner or later. Though critical in natural temperament, he would take advice well, or "at least listen respectfully." He was easily offended and had many jealous moments in adjusting himself to the new situations of an after-coming family of brothers and sisters. He was not especially frank, and never demonstrative. His reactions to daily affairs were for the most part on the surface and gave one no clue that there were deep currents of unrest and dissatisfaction. He has always been committed to a routine. His belongings must always be just so in his room; this insistence upon preciseness was innate and had much to do with his slowness and indecision. While not inclined to take the lead he did not care to be led. He was always fantastic, and his air-castle building of what he wanted to do in life was much beyond his innate capacity of realization, and did not show a very keen insight. His mood was always one of underlying seriousness. He was not enthusiastic but rather pessimistic and very conservative in his innate tendencies. His great ambition at the present time is to run his mother's extensive farm before the superintendents in charge break it down. He is quite perfunctory in his religious ideas; he does not see that his attitude of not forgiving an injury is essentially unchristian, and easily assumes a stern literal

moralistic attitude toward the shortcomings of the workmeu on the farm.

One may picture the actual facts of his youthful career by saying that when he stopped at home he did somewhat as he pleased and got on fairly well; when he went to private schools, usually secular, he had his main difficulties. His difficulties at one of these schools are shown in the following statement of the patient:

"While in this school my speech got worse; the professor and another who had charge of us in the yard and during the time we were not in classes threatened to mop the floor with me. I was about 15 years old. There were a couple of other boys as old as 17 and they were afraid of them and would give in to these two men. They used to beat the kids, and me too. They would use a stick or a strap and were always threatening us. All the teachers did it more or less, but these two in particular had the devil in them. I used to get the worst of it. If we didn't stand in line just right they would get cranky. They would hit us on the hand and probably at night when we were in bed they would come after us then."

It is comparatively easy, then, to understand that with the demanding exactions of this school life the patient reacted with extreme nervousness, did poorly in his class work and lost ground physically. In the interim between the school periods, he spent his summer vacations in the free open life at the seashore, horseback ing, swimming, etc., and in the evenings attended dances and little social affairs and theatre entertainments. In his words: "I liked this life very much." In short, without stress and necessary demands our patient got on quite all right.

We find that he was subject to masturbation as early as 10 years of age and he remembers having discussed such acts with the boys at 8 to 9 years of age. At 11 it was temporarily stopped and he apparently got square with the physical restlessness induced thereby by physical gymnastics, coasting, and Nature study. But at 16 the habit returned and he was involved in it for six months. He kept it up until January or February in the year preceding his first grand mal attack.

We may now take a view of the mechanism of the onset of the attack: First we have the instinctive defect as already outlined; this entailed an inadequate development, retarded his intellectual processes and rendered him inadequate to meet the school training (probably not of the best) but which many another boy stood and "got away" with. His precocious sexuality at puberty ran an irregular and prolonged course and he failed to make the next adaptation in adolescence required of the normal boy. He could not sublimate the defective puberty habits into an objective life of work and play and sympathetic outside interests. Regarding his school life he says: "You see I am naturally slow and deliberate and I think I was sort of paced off my feet. Of course, I didn't study or work harder than any number of other boys, but I just simply could not do as they did and get away with it."

When asked what happens at the slight sensations he says: "The loss of consciousness is much like taking ether or chloroform. I seem detached and slowly sinking out of life. Things seem far off and I am removed from life; not dead, but just suspended, away from things." Thus one sees he is involuntarily withdrawn from reality, which happens to coincide with the motive of his conscious desire.

Thus the motivation of the first series of "sensations" and attacks would seem to have been brought about, in part at least, by certain types of pleasurable acts that are commonly employed for "outraged nerves" as seen in many another neurotic. Further, the patient says: "After the severe attack if they put something cold on my head it seemed to soothe me, and in point of fact when I was a child stroking my head by someone whose hands were cold often put me to sleep and lessened my headache, and has apparently often prevented my attacks."

Regarding his attacks of anger and general irritability, he says: "When I get angry to a moderate degree I walk away from the difficulty, but if it grows serious I burst out in a torrent of words; I see red, I fight and I never am really able to forget or forgive an injury."

Regarding his habit of day-dreaming and its use, vicari-

ous or otherwise, as a help to ward off attacks or to get square with a too demanding environment, our patient says: "I think from the period beginning with the stress in school, and more frequently thereafter, I day-dreamed a great deal. When things went badly I used to day-dream more. Just preceding the day-dreams and castle-building I would be a little depressed and the day-dreams seemed to help me out of it."

Again, in further elaboration of the cause of the disorder of flights away from reality (loss of consciousness) and the desire for acts of pleasurable liberation of a crude sort our patient states: "You see, my physical coördination is slow; I never drew well nor did any mechanical thing easily, and when I am hurried up or the work is more exacting it often drives me into a sort of muscular cramp, particularly in my speech. I felt in school as if I were over-pushed and when I came home I wanted some fun, some other kind of energy in me needed to be released. You see I had an hour's lesson of speech work and then I went bicycling, but I had to bicycle very fast to cover the distance to get to the gymnasium and back; neither the gymnasium work nor the cycling was real fun; they were too forced and it was too much in the nature of a drilling for me to take it leisurely or get as much fun out of it as I would have had had I played handball and free sports."

Many patients have a vague sense of the direction in which they must proceed in order to get well, as shown in our patient's remarks, "I can get well by doing the opposite of what I did in getting sick, and I want sleep and lots of it, and then I seem to want a sober, nice lot of fun and I think in that way I will be able to release this deep down energy which doesn't find a proper outlet in any of the things that I have been accustomed to doing."

To show that the stammering is a part of the same mechanism as the epilepsy, we note the patient's statement, "My stammering and inability to speak gradually came on at six or seven years and was worse every time I put prohibitions against free pleasures, play, and finally self-abuse, and whenever difficult tasks were to be met, like reciting,

talking over the telephone or meeting people (defense mechanism and prohibition). When I am not tired and not obliged to hurry and can take my own leisure I have little or no stammering."

For a short period before the disease developed and ever since that time there has been a sudden wave-like fluctuation of three to four weeks of feeling quite all right and three to four weeks in which the patient is nervous, a little irritable, slightly depressed, and the stammering is much more intense. These depressions in general feelings and general fitness succeed a number of different causative factors, such as lack of sleep, too much excitement, over indulgence in food, and depressing emotions and exhilarations due to too much social activity.

Very frequently during the depressed periods there occur slight mental abstractions during which the patient persists in the activities previously indulged in and during which he is unable to undertake any new alteration of the same (slightest grade of diminished activity of consciousness short of an attack). During the nervous and depressed periods our patient conserves his energies by sleeping longer in the morning, engages in such mild occupations as going to the post office, doing simple errands, seeing a few family friends or lying about reading light literature that requires no special effort. If sudden intensive and stressful work is called for, or great adaptations to a new environment is required, he is apt to have a severe grand mal attack. He has always disliked the city and liked the freer life of the country where he can take things easy and do things that he has an inclination to do. He would now enjoy going to the city for a day or two and "speeding it up," and then would like to return for a comfortable rest in the country,—the basic principle in many a "periodic."

Another attempt at elucidating the motive producing the epileptic disorder shows that the mildest sensations began in August or September of 1910. It seemed they were brought about by an inability to get rid of the "energy" and, on making an attempt, to force sleep; when this state of mental exhilaration was on, thoughts of a rather exciting character,

which had formerly been of a sexual nature, were now directed toward driving automobiles, sailing ships, riding the bicycle, etc. Such thoughts were not satisfying and increased the tension, and when these thoughts were turned away from and sleep did not supervene the feelings of a "sensation" occurred. In a still more frankly autobiographical statement he said, "If I had had someone to do things with me I would have been able to liberate this energy. When I knew that I had to go to sleep the concentration of my mind on the necessity for sleep would bring on the sensations. These sensations were, and still are, the forerunners of the same kind of things that lie at the bottom of my severe attacks. There was a sensation in the head as though it was shaking inside, a vibration; it was slightly unpleasant as it interrupted the ordinary train of thought and yet it gave relief and I could then go to sleep."

Again, "I tried to make the exhilarating thoughts of ordinary physical activity succeed the sexual thoughts completely about in May. I had succeeded in getting square with the former in greater part during the winter and they dissappeared entirely in May or June." Then in July and August all sexual ideas were completely changed into strivings for physical activity, dancing, swimming, etc. But these did not give full freedom to the pent-up energy, and additional efforts towards forcing the mind to change from these to that of a mental concentration on going to sleep was sufficient to break the mental states into attacks. He says, "It was as though I had a certain kind of a job to do in order to go to sleep. After a time the sensations seemed to be caused from a loss of sleep and then concentration of the will made them more frequent and severe—the sensation and the loss of sleep made the necessity for sleep all the more important, but the sensations seemed to make sleep a little more easy to attain; they let off the extra tension." Similar reasoning is given in the not infrequent use of alcohol when one is extra fatigued and can not get to sleep. The same principle is shown in the whining cry of infants who are too excited or fatigued to go to sleep until they have had their crying spell.

He continues, "I am persuaded that the sensations and the disease really all began in my mind and the difficulty of controlling the same, and making it become satisfied with things as they really were, especially in the ability to change my train of thought from the unsatisfying physical activities to that of going to sleep. In September the sensations came fast and severe when I was really starting in at very hard school work and when there was no pleasure to keep my mind in an active state, or even half way satisfied, such as had been the case during the summer. I felt all in. If there was an accumulated fatigue the sensations would come up on trying to go to sleep."

Since coming under trained observation and treatment (a period of ten months) our patient has had but two grand mal attacks, although his daily average dose of 45 grains of bromides has been entirely removed. The patient seems to have been able to drive all conscious thoughts of sexuality as such out of his mind, but as usually happens in such direct repressions when the former are not digested or sublimated, the dreams are filled with sexual matters, most frequently of the simplest and crudest sort, and occasionally with those of a thinly disguised symbolical character. Such dreams occurred almost nightly for the first month. As time progressed, however, they became less frequent and insistent until now (end of ten months) they are from a week to two weeks apart. He says, "A nocturnal emission makes me feel the next morning as bad as though I had had an actual attack, yet the dreams (nocturnal emissions) seem to provoke an attack; they seem to stir something in my mind, deep down that must come out or up." We know the nocturnal emissions or even masturbation often serves as an inciter to normal desire for coitus. Probably the lack of a conscious psychic discharge in such dreams or masturbatic acts creates a real need for the latter. Still more likely, the dream was but the organic demand not gotten square with in the daily sublimations. In some measure the sensations and attacks in this case are definitely related to this unrequited psychic discharge teased up by nocturnal emissions. However, most frequently the

causes for individual attacks, now seen in our patient, are endogenous. For instance, abreacting from a painful situation, that of a fellow patient's death, our patient had been much concerned to find that his companion could not be recovered from his fatal pneumonia; he became somewhat depressed, day-dreamed, was listless in his usual sports and duties and finally had a grand attack, and while confused in the state subsequent to the convulsion (automatic state) he went to his own bed and lifting the coverlet he corkscrewed his way under the bedclothes until he reached the foot; after getting a little breathing space he drew all the clothes snugly over his head and body and with a rhythmic petting and rocking of the body he then went to sleep. But just before he fell asleep he was heard to mutter, "Everybody is all right now; Mr. A. is well, isn't he?"

I would consider the above to be an abreaction from a too painful situation and an infantile flight to the protection and comfort of a state of metroerotism. Although he went about much relieved after this attack, on learning his friend was not better but considerably worse he was again depressed; as he said, "It is still in my system and not out yet."

In order that he might receive the benefits of vocal culture for stammering he was given lessons for two or three months. We find singing defects in our patient analogous to those noted previously in other epileptics (Clark sign), a gross defect in the general emotional life. His teacher reports that he had a very defective faculty of appreciation of notes by the ear, and was not able to sing the scale when he began his work, but after some practice he is now able to strike octaves on the key with few exceptions. The melody and harmony qualities of the voice are bad. The tones are not well sustained and the phrasing is still very incoördinate.

To show how slight and trivial the external cause may be in inducing attacks in such an individual, it was noticed at first that whenever attention was forced, especially to giving attention to conversation or explanations where the subject was a difficult one to follow, the patient often felt a

sort of aching pain that arose from the back of his head and came to the front, and this endured for a period of eight or ten seconds. During this time patient said he was half conscious, felt rather absent-minded but was able to repeat what was actually going on; he was unable to hold his mind ou the subject, and would not be able at such times to reply in an intelligent manner. This was particularly so when he started on a subject which someone was reading to him, or when he was greatly fatigued. The sensation came from the back of the head and projected forward to the right eye and sometimes to the left. As the sensations gradually disappeared these states of mind, which were a sort of warning of lighter phases of what would have been sensations, seemed to take their place.

After three months of special treatment it was noted that our patient fussed less about his room, his habits were more orderly, direct and definite, he did better work, was more persevering, less irritable and made excellent progress in his reading and discussion of ordinary events of everyday life. The sensations were much less frequent, many times only to be recognized by the patient himself. The myoclonic jerks were seen only at times, as noted in the notes that follow. There was a steady decrease in childish traits and manner of conduct; coördination was better; the speech, except on occasions when he was under considerable excitement, was very nearly normal. In the dreams his general attitude was much less openly sexual in character, the nervous periods were less intense and less resistant. As regards the day-dreaming, on the tennis court it was frequently noticed that he would be fairly talkative, would stop his work, and stammer badly. Very frequently his ideas became so vivid to him that he stopped working and stared in front of him or looked listlessly in the opposite direction and it seemed as though he was having a petit mal attack. Careful analysis showed that this was but a form of day-dreaming in which he was carrying out some elaborate fancy about what he intended to do when he got home.

The simple use the patient makes of dreams of attacks is

given in the following instance: In the night he had dreamed that he had had an attack and that when he awakened next morning he wanted to go down to his breakfast but the nurse would not let him, saying that he would bring his breakfast up to him. The patient thought this dream was real, as his nurse was dressed and out of the room when patient awakened in the morning.

Under precise daily analysis and observation we find that our patient begins the day by dressing according to a definite routine which is invariably followed. When this routine is interfered with he becomes sullen and uncommunicative and finally if not released from it, he flies into abusive rages. His greatest wish, which lies at the bottom of his day-dreams, is to return home and assume his position as head of the family; to enlarge the ranch, and to make sufficient money so that he would not have to borrow from anyone; he wants motor cars, a launch and a private fishing and hunting preserve. He never expresses a wish that does not center about himself. While to ordinary observation he appears to be gentlemanly, kindly and courteous, he can easily be aroused at the fancied aggressive qualities which he believes his companions entertain towards himself and others. In all his daily activities he continually strives to reach a state of perfection for purely personal satisfaction and pleasure. No subject is too monotonous for him to argue about. His set, rigid views frequently throw him into violent conflict with everyone about him, and not being able to shift or modify his opinions the consciousness of getting the worst of the argument causes him extreme annoyance. Avoiding all discussion is the one way to obviate disappointments.

An episode in the life of our patient is worth citation for several reasons: First, because one may see the manner in which a sentimental attachment may harmfully excite deeper sexual desires, and inflate other unconscious desires, withdrawing the libido from safer and more stable sublimation, and provoking epileptic symptoms in consequence. Secondly, the situation gets beyond all the ordinary character controls, and at the height of the condition char-

acteristic sexual dreams appear; these being unsatisfying, the tension is relieved by desultory employment and sport. Then there follows a renunciatory dream of more intensity, after which the unconscious demands begin to collapse, and the patient is finally saved from an attack.

Our patient had been introduced to a young lady for whom he gradually formed ideas of an attachment of a more or less sensuous character. He talked and walked with her and engaged in some athletic sports. So soon as the attachment, more or less clandestinely planned for, had advanced, he dropped off his study and work in shop and garden. He became restless, snappy in his conversations and disinclined to follow any routine. He spent long times in his room alone, could not concentrate his attention, and everything went wrong. He felt "tired all over." Long talks with a fellow patient followed on sexual matters and marriage. He then began to have frightening dreams of robbers, fire, etc., and others of a frankly sexual character. He had rather persistent headache, did no work and could not sit or lie still. His sensations (petit mal) then began to appear. He could not converse with anyone, and stammered greatly. Going about doing as he wished seemed the only way he could "avoid having a grand mal attack." He finally began to complain of various aches and pains, fussed with his clothes and bureau drawers. He moved about slowly, rubbing his head and face and grunting to himself. The sensations then increased to mild "myoclonoid" jerks but they were not sufficient to throw him down. He now took nearly two hours to dress in the mornings, was dull, grouchy, and answered briefly or not at all at the table. He could not decide in anything and was reduced to complete physical and mental impotence. He still carried on a lively imaginative fancy in regard to the girl, although he no longer saw her or wrote to her. He said afterwards that he was "in a fog or a mist," had felt nervous all over, and wanted no one to speak in his presence. He no longer had any particular aversion to anyone about him or to any phase of his environment; he simply wanted peace and quiet—to lie abed and neither sleep nor dream (extreme shrinking from

reality). He then had a dream of conquest and triumph, which ended in a magnificent renunciation. Following the "great" dream he felt less shut out of reality and in a couple of days gradually came back to his study, work and play. During the greater part of this episode, as he was not able to ascertain the real nature of his conflict our patient was allowed to do just as he pleased; he was "let alone" by the others and gradually succeeded in "righting ship" without having a grand mal attack.

As an illustration of the difficulties the patient has experienced in adapting to a new environment, the following gives us an understanding of many of his personal characteristics not yet fully adjusted or subdued:

He displayed no particular interest in the departure from the country at the end of the summer season, other than the usual preparations of packing, etc., in which he showed the childish attitude of being unable to decide what should be done first, becoming depressed, annoyed and upset when he was not allowed his way. He was quite satisfied to return to the suburbs and pleased with the arrangements that were being made about his accommodations, for this had all been explained to him and he knew what to expect.

On arriving at the new quarters he looked over both houses and at once decided to live in the house Miss X. occupied. This house appealed to him, and by being located there he saw an opportunity of being relieved of the necessity of associating with a Mr. A. for whom he entertained a great dislike. It may be said that this dislike started quite naturally; when he first joined the club some ten months ago he became very fond of the companionship of a certain girl patient and her nurse, but on the arrival of Mr. A., who was more developed, quick and naturally clever, he was gradually crowded out of this girl and nurse association. Jealousy and envy of Mr. A. then grew apace. Now, when he was informed that it was not feasible to take accommodations in this house, he sulked, became grouchy, and went about the house frowning and mumbling to himself and otherwise showing his displeasure. He answered only when absolutely necessary, and then only in monosyl-

lables. Explanations by the nurse and physician relieved the tension somewhat, at least to the extent of making it more bearable, but it was evident that it still held a prominent place in his mind. When he was told that he must not hold grudges, and that he only made himself unhappy by assuming this antagonistic attitude, he said: "If I give in now it will only be worse next time."

Finding he could not gain his point in regard to having his room changed, he turned his attention to getting permission to spend a whole day in the city. He was informed by his physician that half a day would suffice to attend to his business there. This produced the grouchy condition again, and he went about with sullen expression, mumbling to himself and otherwise appearing displeased at not being able to have his own way. He said he was being treated like a boy. The grouch, however, gradually passed off, and he became cheerful with everyone and at once turned his attention to golf, wood carving and his correspondence course.

However, such a prolonged degree of stress and irritation had at last to be repressed, and two or three days after he began to develop a period of extra frequent and severe myoclonoid jerks for several mornings. In the language of his nurse: "He came within an ace of having a grand mal attack."

As is well known, each frankly established epileptic has a more or less definite cycle of recurrence of attacks. In this case the distance between the crest of the wave of one incipient storm to the other has gradually widened from a few days to several weeks. The intensity of each rising storm period steadily lessens. For instance, we have a day or two of irritability when things go altogether badly, interest in all work and play falls away, and there succeed several days of dilapidation finally ending in a period of rest and extra sleep; then once more our patient begins to mend his desultory interest and start in again on his correspondence course, handicrafts and outdoor sports. He is then contented, free from "sensations" and any stress. He soon desires from pride or ambition to hurry the previ-

ously neglected duties faster than he is able rightfully to manage; then there soon succeeds a feeling of increased nervous tension, some defect in concentration and attention and a failing grasp and retention of the subject matter. This irritates and disheartens the patient. He then lays the discouragement upon some trivial misunderstanding with his associates, which finally ends in arguments and disagreements. Stammering, slowness and awkwardness in all duties again come to the fore, and our patient is again at the crest of another break. Even though the bad handling of his activities is so obvious, to gain his confidence and acquiescence to guidance is no easy matter. That he has had no grand mal attacks in a year, however, speaks well for the routine handling of such a case.

Finally I may say that the myoclonoid jerks have largely disappeared, under ordinary circumstances. For the most part they have been concentrated into morning "sensations" and are appreciable only to the patient. He has become in a large measure well adapted to his particular environment, attends to his gardens, engages in wood carving, and studies well with little prompting. He is much less restless, irritable and self-assertive, and is thoroughly interested in the whole system of physical and mental upbuilding.

We may briefly *summarize* this case by saying our young man had certain inherent traits and instincts from birth, and as his general development advanced, these defects became more telling factors in hindering the development of proper intellectual and moral habits. These in turn retarded and weakened the whole capacity of the young man to adjust himself to adolescent life; the friction of the environment became too great, and he could not make the sublimation of the masturbatic period into sports, play, and finally work of adult life. It would seem when the masturbatic habits had to be repressed the lack of an adult adaptation or outlet increased the tension to the point that the unconscious demands chose nothing less than a complete epileptic reaction by withdrawing the individual entirely from a too demanding environment (in loss of consciousness); later, when this failed to be sufficient, the

degree and amount of release demanded superadded convulsive phenomena, as indicated in my former studies. Undoubtedly the neurotic symptoms of stammering in this case were a partial and earlier break into a neurosis at a higher level; this mechanism of defense, on the part of the organism unfortunately, and yet like most other neurotic symptoms, entailed further and severer handicaps on our patient and made the wreckage of a final epilepsy more complete. The crying demand for an early and wise therapeusis in such cases is only too obvious.

Lest one may think that too much stress is laid upon the definite psychologic settings in the causation and continuance of the epilepsy here, it may be said that there are also physical counterparts to the maldevelopment. If not shown in actual physical anomalies they can still be shown in functional incompetence. To meet these, such as the defect in vasomotor tone, hydrotherapy is fully employed in packs and friction rubs, spray, douches, etc.; the enormously ravenous appetite has been controlled and adjusted to a lower proteid diet, the constipation and mucocolitis has been met by proper laxatives and colonic flushes, and ordinary laboratory tests are frequently requisitioned. The lack of muscular endurance and incoördination is met by setting up exercises, wood chopping and tending garden, wood-carving, and suitable games such as tennis, golf, medicine ball, and pool. As for proper guidance in intellectual development a course of study in agriculture and the fundamentals of a business education have been outlined and used. Above all and through all runs the moral training of proper habits and obedience to the physical and mental hygiene such as might be expected of a normal boy of his age. The proper adjustment to a normal diversified life is aimed at under the wise guidance and supervision of the nurse and physician, who strive to enter fully the patient's life from all aspects and help him in best ways to help himself.

Section III.

A STUDY UPON TWO SEPTS OF FAMILIAL EPILEPSY, WITH DETAILED REPORT UPON THE MECHANISM IN ONE EPILEPTIC INDIVIDUAL OF THE SERIES.

Occasionally opportunity is given to study an entire sept through several generations of epilepsy. This is a matter of considerable importance in our present day understanding of the nature and pathogenesis of epilepsy. During the past few years I have had two such families under study. The first family is comprised of the grandfather, who has had but one or two grand mal attacks in his life and who possesses the epileptic make-up; and of the grandmother, a confirmed epileptic since her 43rd year, who has not the epileptic make-up. From this union there were four children: The eldest, a daughter, appears to be perfectly normal with none of the epileptic character or temperament; the next, a son, is also a healthy, normal individual; the third, a son, is an occasional epileptic with little of the make-up; the youngest, a daughter, is a confirmed epileptic of long standing and possesses the classic make-up. In the case of the latter, who married while epileptic, there are two children, one of which seems to have the mother's make-up and disposition. Thus we have eight cases for personality study.

The grandfather (No. 1) was a poor boy, very energetic and resourceful mentally, but he possessed very little capacity to do any practical work. Although people as a rule liked him, he was never fond of them. He was rather conceited and inclined to be a leader. He was impatient and could brook no interference with any of his plans. He had violent tempers as a boy, and when provoked at a great disappointment at the age of twelve he had a classic grand mal attack. He rapidly learned to control his tempers after this incident. He threw himself into his school work and finally entered on a successful business career at 21 years of age, where he found full scope for his extraordinary energies. His tempers of early life entirely disappeared, and

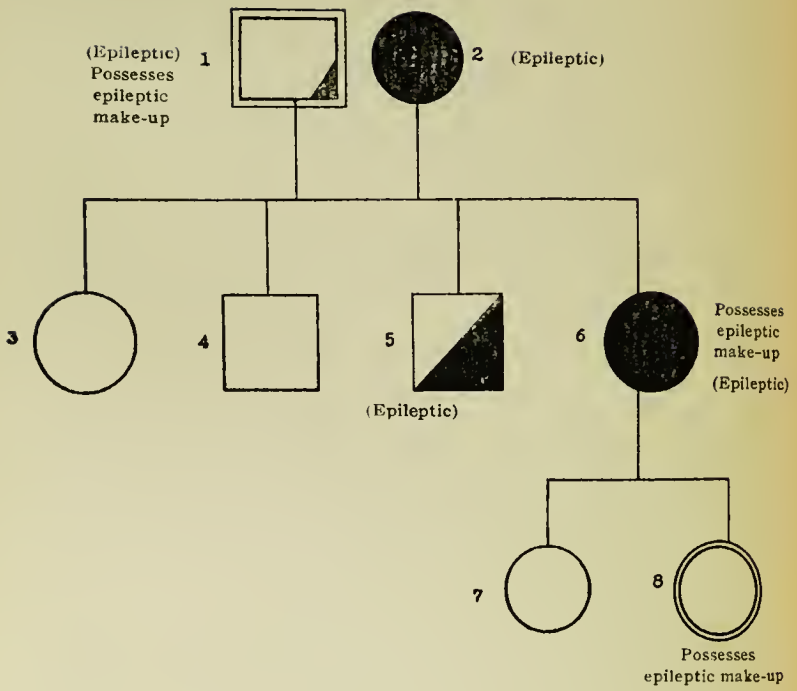

CHART I. Showing three generations, of which two of the four epileptic members, and one non-epileptic, possess the classic "epileptic make-up."

he had no more epileptic attacks. His epileptic daughter resembles him very markedly, both physically and mentally; they never could agree, and were always at odds. It is said of the father that he has never accepted a physician's statement that his wife or children are epileptic, and whenever it is so affirmed he says, "Oh, yes, the doctors think they are epileptic, but they don't know." He has never interviewed a physician regarding them and ignores the whole subject entirely.

To summarize, the grandfather is a bright, energetic "driving" type of personality, rigid and firm in his discipline, who sees only the "things he wants to see." He had the temperament and character make-up of the epileptic constitution but obtained the proper trend of interest and outlet in adolescent and adult life, and has, so far as known, never had another attack.

The grandmother (No. 2) is now 69 years of age and is in fairly good health aside from her epilepsy. She had her first epileptic attack at 43 at the birth of her last child (No. 6), when she suffered a severe general infection with "meningitic symptoms." Soon after, she came under my care for classic grand mal attacks, which under the most intensive principles of treatment were never greatly benefited. The attacks occur weekly. There has been very little deterioration in memory or character, and she lacks the epileptic character in any of its settings, either in youth or adult life.

The epileptic daughter (No. 6) was a stubborn, difficult child from birth. She was rather lazy and sluggish and had no power or inclination to get square with tempers by physical exercise or sport. She had many tantrums. Girls whom she did not like "didn't exist" for her, and "she never seemed to notice their presence." When complimented about her good looks she would reply with acerbity, "You needn't tell me that; I have my mirror." She had few friends and seemed to care little for them. It was easy for her to take on new acquaintances if she cared for them, and quite as easy to part, and she never mentioned their names after they had once moved away. She never

forgot or forgave an injury. She was egotistical and supersensitive, and never affectionate or demonstrative toward any one. She was indifferent to social life during her student days, but stood well in college classes. She made few friends while at school but seemed little annoyed about it. She had her first grand mal attack at 14 after a prolonged irritation in not being allowed by her father to have her own way. She was first repressed, sullen, and then the attack came on. For years after the attacks were in evidence, the relatives believe she delayed or put off many of them through an escape by her music. Her speaking voice is monotonous; her singing is clear and distinct, but not especially melodious or musical, and "something in the quality of expression is left out." "She has none of the qualities of the mother in feeling or understanding" is the statement of the brothers. She has always lacked in veracity, but unlike the telling of exaggerated stories by the father, "she doesn't seem to *know* what the *exact* truth is." At the age of 21 she married socially beneath her, much against the advice and wishes of the whole family. The husband knew she was an epileptic, and also knew she would receive no funds or other considerations from the family. There are two children by this marriage: the elder is very animated and normal and resembles her father (husband of No. 6); the younger daughter, now 3½ years old, has the identical make-up of the mother, and has already shown the same epileptic character. In comparing mother and daughter our informant states that this child "is little M. all over again." As might be expected, the marriage has been a failure after seven years' trial. This is apparently due to the fault of the wife; and she abruptly left her husband and children, went back to her own father's home, and expresses no concern whatever for them. Her leaving her husband and his home was apparently motiveless; she says, "I just got tired and left; maybe I will go back again sometime." Her sister says "she shows no evidence of mental deterioration as ordinarily understood, but there is a profound ethical and moral degradation in the short years of her married life, and yet they are only her old faults writ larger and more

indelibly, and her attacks seem to be but an expression of the whole lack of proper development." Since returning to the father's home she does little but go about and enjoy herself, and the attacks are much less frequent and severe.

We will now consider briefly the make-up of the brother (No. 5) 28 years of age, who has had infrequent epileptic attacks since his eighteenth year. He is of a perfect robust physique and probably has had but six or seven attacks in all, and but three grand mal in type. Almost from birth he was considered a difficult, stubborn child. When reprimanded he resented it and had tantrums. If punished he "smouldered with hate." At the times of his tantrums his mother, not being strong enough to cope with the difficulty of managing him, would pour cold water on him, which had the desired effect. His physical development was not retarded or imperfect, but it was noticed that he was slow, but not stupid or lazy. He had little interest in many of his studies and did not seem to care. He was always tutored, and his education is not up to his opportunities. He went only one year to college because he simply did not want to go. He has since been admitted to the bar and does corporation practice faithfully and well. Since leaving college he has mapped out his own course and has gotten on much better. Compared with his father it is stated that he is not so energetic as the former, although as he grows older and shapes his own activities he is growing in this respect. In late adolescence he was able to make a better social adaptation, and now is universally liked; he never loses his temper. As a child he played freely with other children, although he had to be handled with a certain amount of tact. He was affectionate and demonstrative and was never suspicious or mistrustful, although easily offended. He was always frank and open but has never cared to unburden himself and wants to do things in his own way. Although cheerful and lighthearted in temperament, he becomes easily depressed. His emotional reactions to daily life are shown in his "being way up or way down." Since being in business he has grown a little more irritable, and he often comes home and

says, "I have just smiled all day long, and I can not smile any more." His irritation lasts but a short time now, and can be gotten square with by music and social intercourse with his friends.

The sister says, in regard to the temperamental make-up of this brother, that he has some of the characteristics of both parents. Like his father he is supersensitive and egoistic, wants good food and clothes and likes to spend freely; but he gets the refinements of his nature from his mother. His appreciation of beauty, music, flowers, architecture, etc., is from her, and undoubtedly helps him out in "tight places." His present position is thought to be quite a strain, with the hurry and bustle of business requirements. Since he became epileptic he was jilted by the girl to whom he was engaged, and took the situation very hard; he cried and trembled violently; a convulsion seemed threatened but none occurred. He then went away for several days to visit friends, enjoyed himself, and very soon was apparently all over it. About three years ago a grand mal attack occurred, at a time when he was much worried, had slept little, and was obliged to go without his breakfast on a particularly cold day. It is said of him that he goes on the theory, "I will go ahead anyway, *no matter what happens*." He keeps to no physical or hygienic regulations and is probably on the way to a later epileptic career, although his resources of adjustment by way of music and the arts have enabled him to get square with the irritation and annoyances of daily life fairly well. Having started in life with the epileptic character, he found vicarious outlets and trends of interest sufficient to relieve the irritable tension; finally, since he has gone his own way, he has had infrequent attacks and those mostly of the petit mal type. In just such cases the most hopeful prognosis may be entertained if the patient can be influenced to lead the proper life, satisfying and non-irritating, with plenty of emotional outlets of interest to balance the sensitiveness of the individual make-up. Of course ordinary physical and mental hygiene should also be maintained.

A minute detailed examination of the remaining two in

the family, sister and brother (No. 3 and No. 4), reveals none of the character of the epileptic make-up and is not sufficiently interesting from a pathologic standpoint to warrant detailing here.

To summarize this family as a group, one sees that the grandfather had but one or possibly two grand mal attacks, but nevertheless possessed the classic epileptic make-up. He had, however, the innate capacity of life adjustment to save him from further manifestations of outspoken epilepsy. The grandmother probably contracted a meningitic lesion which took on an epileptic reaction of the symptomatic or organic type in the apparent absence of the epileptic make-up. Of the children from this union, two are epileptic, the one girl with the classic make-up and classic attacks; the brother, with about the same initial defect in instincts as the sister, began early to make better adaptations and has succeeded in overcoming the character in greater part, but not quite, and therefore he still pays for the defect by occasional epileptic reactions. The other sister and brother in the family possess none of the epileptic character and are quite immune from any epileptic manifestations. The married epileptic daughter has one child with classic make-up akin to her own, and everything will be done to conserve this child from epileptic reactions in later life. The unmarried sister has a true insight into the nature of the situation and is able and willing to devote her life to bringing up the epileptic sister's children in a healthy manner. I may say that I have had opportunity to examine carefully all the members of this family-group, with the exception of the grandfather.

The second family group consists of but two cases of pronounced epilepsy in two of the three generations under observation. The grandmother (No. 2 on chart), one of my patients, is now 50 years old, and contracted her epilepsy at 33 years of age. The attacks have occurred three or four times a year in a series of three to four grand mal at each period. She was born of a neurotic family stock. Her mother was a resourceful, masterful woman, and the neu-

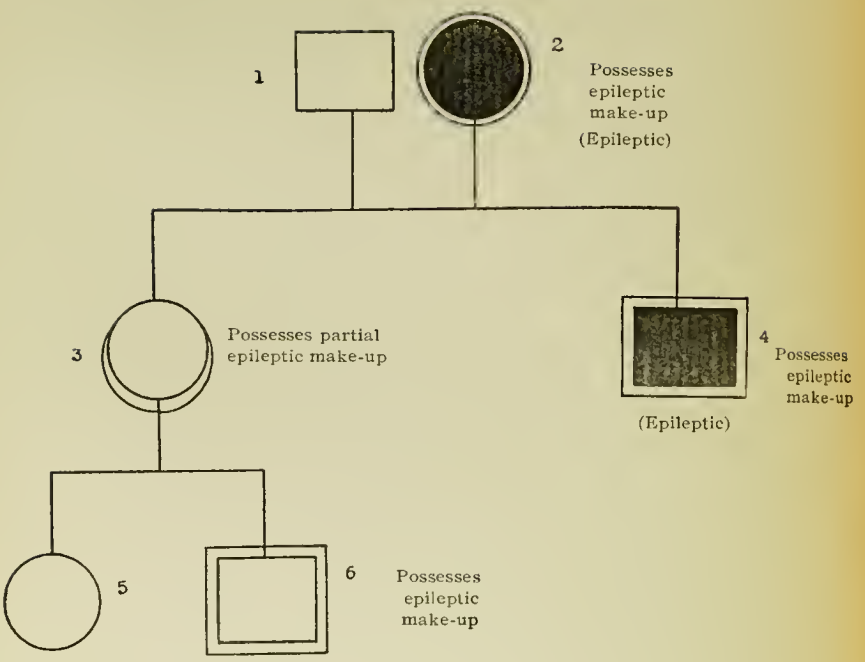

CHART II. Showing three generations, of which the two epileptic members, and two non-epileptics, possess the "epileptic make-up."

rotic element seemed most dominant in the mother's brothers, all of whom had violent tempers—one in particular is said to have gotten into uncontrollable rages in which he hurled abusive language, and afterwards would attempt to mollify the recipient of his abuse by handing him a ten dollar bill. The patient herself had several brothers who are said to have inherited their temperament from the maternal side. She was a petted, spoiled child from birth, being the only girl in a family of several boys, and the latter together with the parents supplied all her needs and gratified her merest whims. She had a proud, imperious disposition, but as it was never thwarted there was no evidence of what might have happened if it had been. She was not attentive in school and never applied herself seriously. Her school standing was very indifferent, and her general education was not up to her opportunities. She had a final fashionable boarding-school education. She was slow in making up her mind, was impractical, and was slavishly fond of her mother, now dead a score of years but whose previously expressed thoughts and principles she follows out as carefully as though she still lived. Her point was ever to be dignified and not show emotions. She was never demonstrative toward anyone, her mother, her husband or her own children. She always chose her own gifts, was always critical, and often "pouted" at fancied slights. All her life she has had no conception of punctuality, can not manage little things or situations, and seems rather surprised when others are able to accomplish these things. If she is hurried she becomes flustered, and it is said that "she just goes her own sweet way and lets the other fellow wait." Everyone about her bows to the inevitable, and thus everything moves smoothly. When flustered she seems lost for a time, says nothing and does nothing, and "there is just an extreme, placid calm on her face." When others who have been delayed and annoyed, storm and protest, she herself remains serene and sweet through it all, and never loses her temper. Nothing seems to be known of her inner life as a child or in girlhood, and she herself says there was nothing especially thought or felt during that period. In later ado-

lescence she was very morbid and liked funerals, and she would never miss a funeral if she could manage to get to it. Once she had charge of the funeral of a man whose wife was her dearest friend. The remains were three or four days in coming home, but she insisted on having the casket opened to satisfy her curiosity when it arrived. She likes to be around people who are ill, and exhibits a sort of morbid curiosity. In caring for the sick she experiences a keen sense of fulfilling her duty. When her mother died she insisted on helping to dress her, although there was no necessity of her assistance. When anything happens she keeps her dignity very well; she very rarely cries, and never gets excited. At one time her daughter was seriously ill, and through it all she remained very quiet, dignified and "brave." She is inclined to take life over-seriously. When anything unusual is going on, she hates to be cheated out of it; for instance, she was furious because she was not informed in time to be with the daughter when her child was born, and stated emphatically that she "did not *want* to be saved from the ordeal." She has no sense of humor, and is not optimistic. She feels neglected if the daughter fails to telephone each morning to ask how she is, although her answer is invariably, "Oh, so-so," and she never says she feels fine. She takes pleasure and good news very quietly, and has never been known to be jovial or enthusiastic. She took up a little settlement work, and rather enjoyed hearing hard luck stories but never really entered into the spirit of the work. She is fond of the theatre, but always likes to be coaxed, even to do the things she enjoys doing.

When her daughter married she did not quite know how to meet the situation. She had previously disapproved of the match, and did not want to greet the son-in-law as a friend, nor yet to recognize him as a son-in-law. She seemed to be waiting to know her husband's viewpoint and depending on his attitude, and in the meantime she was simply lost. She is now devoted to this son-in-law, and the latter brings a great deal of enjoyment into her life.

She takes real troubles very hard and can not get over them. She is very conventional in her grief. She insisted

upon wearing mourning for a year when her mother died, even though her brother, a physician, requested her not to do so. After three or four months had elapsed she consented to go to the theatre after a good deal of urging. She argued that if the mother were alive and could be consulted she would expect her to wear mourning. It seemed absolutely to be a matter of going against convention rather than any depth of feeling. She was pedantic, phlegmatic and rigid, and could not be moved. Her husband almost went down on his knees begging her to resume her life, to go about and follow her usual activities, but it took months before he succeeded in having her do it; she still continued to wear mourning, however, after she finally consented to go about socially as the others did. She always felt sorry for herself, yet would not have had things otherwise for the world; she just luxuriated iu her woe. She now procrastinates in moving from her present home, and sighs deeply at the thought of making a change. She is not religious and derives no comfort from religion, but goes to church once in a great while as she wishes to be "represented." At the grave of her mother (who had been an invalid for years) she was very calm. The daughter once roused her to great anger by saying she hoped she would never live to be old and decrepit. Our patient said it was a terrible thing to say and reflected on the grandmother. She said: "If you feel that way, I hope I never will." She clings tenaciously to tradition and is very reactionary in civic, religious and social views. She often remarks: "I do not think anyone could have improved on the way my mother brought up her family." She does not like the idea of going away from home, yet becomes a different woman when she can be urged to do so. The husband came home one afternoon after she had been preparing for two weeks to go to a distant city to consult a physician, and said he thought it best to start that night. She replied: "No, I can't go to-night; the laundry isn't put away yet."

At present she has no intimate friends excepting those who have taken a strong liking to her and with whom she plays bridge. She is very kind and thoughtful of them;

the others are mostly family ties. She has a stupendous family pride and is "forever talking about her ancestors and their ancient achievements."

Now, upon this extraordinarily supersensitive and child-like make-up were thrown three great emotional crises, and we shall see their results. The first was a romatic fancy for an elderly friend of her brothers. When this friend became engaged she became depressed, was sleepless, lost her appetite, and had "faints" (probably petit mal in character from the description). She stayed at home and remained in bed for two or three months. Under special mental treatment and distractions, which finally ended in a change of scene, the episode was passed. The second trial occurred some three or four years before her first grand mal attack. She married at 24, some six years after the "first love affair." Sexual intercourse was painful and always unpleasant. Her first child, a girl, at 7 years of age contracted spinal curvature, and the mother then came out of her "eternal calm" and worried about it continually, night and day. She slept poorly, lost in weight, was fearful, depressed, and had anxious dreams. She has always admired erect persons, and possesses a beautiful physique herself. She has always admonished her son to stand erect, sit straight, etc. Four of her brothers had good physiques, and two had not; one brother had scarlet fever, and this affection left him with a weak back but he finally overcame it and carried himself well; the youngest brother has one shoulder higher than the other. Her own mother, who was a little round-shouldered in later years, had been considered a very handsome woman and was married at 16. Our patient says: "I could not bear the thought that a daughter of mine should have other than a perfect physique; this has been our family pride, and it seemed as though my only daughter should not break the traditions in this respect; the idea was unbearable." She then began to take the daughter to many physicians. Even though the daughter pleaded that she was satisfied with the treatment she was getting, the mother would turn to her sharply and say: "I don't want you to grow up and accuse

me of not doing all I could for you." To the mother the whole affair was unendurable, and though the curvature was finally controlled she continued to worry, and this ended in an attack of grand mal. She has gradually become reconciled to the daughter's defect, but with a continued epileptic reaction whenever stressful periods supervene. The third period of mental stress was when her only son was pronounced epileptic, at which time a series of attacks occurred. For the past nine months, since the son has shown a marked improvement, she has had but one attack, whereas half a dozen might have been expected.

To summarize, we have here the history of a rigid and supersensitive woman, who was given no adaptive or adjustment training or education; who was self-centered, repressed, and so slavishly attached to her mother that she has continued emotionally infantile throughout life; one who has never accustomed herself to handling any strong emotional episode without epileptic reactions. Her husband says, "She is too sensitive to the rude winds of life, and must be protected from them as much as I can make possible for her." We may say in passing, that we have followed his lead, and she has been advised to give up housekeeping and to take up an active outdoor life, which she has always liked and wanted to do. In addition she is living under a régime of as good physical and mental hygiene as possible.

We shall now pass on to the son's case (No. 4). He is now 24 years old and began his epileptic career at 15, with minor attacks or absences which finally terminated in grand mal attacks at 18. In the petit mal attacks he first experiences a feeling of tightness in the stomach, and a sense of uneasiness as though gas were present there; then he wonders whether he is going to have a sensation and becomes interested to see how it will end and whether a sensation will develop or not. After this there is a feeling of dryness of the mouth and tongue—a condition similar to that which he has experienced when keyed up for examinations, at a school recitation, or when something hard has to be accomplished, especially if it has to be done in a hurry. Then

there is a heightened sense of subjectivity, and homesickness and lonesomeness succeed. The above takes place in an incredibly short time, and then a "wave" occurs.

Just before the sensations are to occur the patient often feels a lack of *rapport* with those whom he may be with and a sense of indifference or boredness follows in which he feels a heightened sense of his own body and mind, and a "detachment from others about him" (increased subjectivity). There often follows a sensation of "disgust" in the pit of his stomach, which is always directed toward, or felt for, his surroundings and the people about him. The indifference exists long before there are "waves" or other actual epileptic symptoms: they occurred especially in the absent-minded states of which his mother complained when he was a small boy and which were often spoken of as states of absentmindedness. These states are now attended by confusion or loss of consciousness; otherwise they are identical with the earliest habits described. First there is a feeling of apprehension, then staring, and disgust; secondly, a feeling of pleasurable amiableness and contentment. As the petit mal departs there is an irritable depression in which the patient seems to want to be undisturbed, and as though he were "trying to remember or wishes to finish something" before coming back to the everyday conscious state.

From earliest infancy he was a stubborn, difficult child and had frequent tantrums all through his childhood. In his best periods, however, he was generous, kind-hearted, thoughtful, and affectionate. As a child he was fond of romancing and if anyone interrupted him he would start all over again at the beginning. He was inclined to wander from the point, and simply could not speed up his mental action. It was noticed early in life that he had what is known as the epileptic voice sign. His speech was scanning, with an irregular phrasing of his sentences. While he was lively as a child he never coördinated fast or well. He was a fat boy, constipated and had poor physical endurance. His mind was never rich in ideas but he could accumulate facts. While he learned easily he never did things that were especially original or clever. He

never went into anything deeply. If he had an idea and was balked in carrying it out he never argued or teased about it; he at once threw himself on the floor and went into a tantrum. He was supersensitive and never could bear disappointment of any kind, and this has always been his peculiar temperament. He was always afraid of getting sick, or being poisoned, and he could not bear the sight of blood. Aches and pains bothered him a good deal, and in any illness he always felt very sorry for himself. After the tantrums there was always a sense of relief, never any moroseness or sulking. However, if he really wanted a thing he made up his mind to get it, and was never known to be sidetracked or to give up the idea of getting the desired object. Even when he had reached the age where he could be reasoned with, he would still "fly off the handle." When the sister was asked what caused his epilepsy she said, "I suppose the minor attacks are but the forerunners of the severe ones, and that the former came on as a part expression of his lack of proper mental development. His mind did not grow with his body. First, the tantrum episodes were an expression of his inability to get square with things; later, the attacks of anger replaced the earlier child-tantrums. When the anger episodes were not sufficient to express his mental attitude, the abstractions came up and then the attacks followed."

While the sister (who has a somewhat similar make-up) went to the father to straighten things out, our patient went to the mother to get his desires satisfied. The mother never reasoned with him or explained the difficulty away and rarely yielded to his desires, and yet he never went to the father who handled such situations quite differently. Our patient's difficulties were largely on ethical grounds; he could or would not make a compromise with necessity, and consequently he was a "much disappointed boy." His conflicts largely came about because he always had a latent desire to do things only in a certain way—any other way would not do, and to be opposed or directed generated heat. When he was allowed to do as he pleased he was smiling and happy and went about whistling. Even when any contro-

versies came up with the neighborhood boys he went "all to pieces," threw up the game, and would not play.

A sample of the day-dreaming of earliest childhood is shown in the patient's statement that when he was very young he found great pleasure in being near his mother, and at such times he would seem to forget everything and apparently wander off in thoughts of his own; he was conscious of all that went on and could hear any conversation that was being held, but would not join in it and did not have the desire to do so. His mother on these occasions would scold him and tell him he looked foolish staring into space. As he recalls these flights, he says that they were pleasant and satisfying.

Something of the nature of our patient's social reactions in his "deep down" dislike of his associates who do not fully meet his nice conception of society, and the beginning mental settings leading up to a series of attacks, may be gained from the following and other notes. They are taken from the close study of our patient after he had joined the club for detailed observation and a training treatment.

While under observation the patient went through a period in which he became rather quiet and made no effort to join the general conversation unless directly addressed. He remarked that he was "not at all homesick," but frequently referred to home and said he wished he were going home instead of with the rest of the group to the country. On being asked his views relative to the different members of the group, with whom he was thrown in contact, he said that Mr. A. possessed a childish personality he could not like, and that he had no patience with him and found it annoying to be in his company. He then said there were very few in the group he cared to associate with as he considered them not up to the mental standard their age would demand. He liked Miss X., whom he considered far superior to the other patients, and also derived enjoyment from the society of two male nurses. On the whole he found the other guests rather boresome, and did not care to associate with them for that reason. Although it was apparent that he was homesick, the patient himself

attributed his disagreeable feelings to his associates. He said he knew it was wrong to let this feeling get the better of him and he would try to forget it, but "it was hard to do so when such conditions were present."

To show that such superficial rationalizations and a desire to overcome his attitude only stirred the surface of things, we note that although our patient became cheerful and happy and talked freely, nevertheless he repeatedly expressed his desire to be going home instead of preparing for a summer in the country, and within twenty-four hours he had a series of petit mal and grand mal attacks. Following these attacks the patient was decidedly more cheerful, and the marked depression so apparent in the early hours seemed to pass slowly away.

When asked to describe the feeling that gave him the warning of approaching trouble the patient at once began to hesitate and replied, "Why—it's like a—a feeling of (frowning and making motion with index finger and an expression of annoyance)—like gas passing or trying to get out." Although able to talk freely after the attacks, provided the conversation does not apply to the cause of the disturbance, if this subject is brought up he at once frowns and has great difficulty to describe what he feels at such a time. In point of fact, it is *indescribable*, and hence probably quite unconscious.

The patient's infantile attitude toward the mother-father complex is shown in many ways. For instance, while visiting with relatives he preferred to spend his time with the women, and sat near the aunt and held her hand. Frequently on going out for a short while he kissed each one, and again on his return. When talking to the male relatives he assumed an attitude of submission, he allowed them to do all the talking, and agreed with them in all things; he was timid, blushed easily, and made no effort to speak with authority while conversing with them.

As a young boy the patient's greatest friends were a family of six boy cousins, who were allowed many privileges which appealed to the patient but of which his parents did not approve, such as playing cards, staying

out late, etc. When the patient did these things, he was reprimanded; while he considered that he had done no wrong, he knew he would be brought to task and brooded over the situation from day to day. When in company with his cousins he was told that he interfered with their pleasure because he wanted to go home too early, and rather than offend them he would remain, saying, "Well, I'm in for it again." When he reached home, no matter what the time was, his father or mother would always call to him and ask where he had been. If he happened to slip in without being heard he knew he was sure to be catechized in the morning. This state of affairs began when he was twelve years old, and became more unbearable as he grew older. Previous to the age of twelve the patient recalls that when he fought with his sister he was usually blamed for causing the trouble, the parents as a rule taking the sister's part.

For many years the patient was conscious of "being held within bounds" and resisted being in this position and preferred the freer life his cousins lived. His parents were very nervous and nagging, and he now states that they were wrong to be so strict, and that it was their own condition that brought about his attacks. A member of the family states that the patient was chastized many times for remaining out late, because the parents were afraid something might happen to him; he exhibited a violent temper and they found it very difficult to control him. In a free monologue our patient gives the following family setting as being responsible for bringing on many attacks.

"When I had my first attack, my parents consulted a physician, who, after giving me a careful examination, began to talk to me, and during the conversation he said I ought not to go with my boy cousins. How could he have known about them if my parents had not told him? Later my cousins told me I should not go with them because I was sick and should live more in the open, and that I could not do this and continue to associate with them. I knew that my father had told them to talk to me in this way; I felt as if my parents nagged me, and wrongly, because I

would have been so much better off had they allowed me to go my own way." The continued interference with the manner in which he wished to lead his life caused another outburst of attacks immediately after he was placed under medical attention.

To return to more recent settings: After a period of clear mental skies, the irreconcilable attitude toward the social setting of the club was again in evidence, but after he had talked over the various situations and become more consciously adjusted, the attacks became less in evidence. One evening after supper the patient said he would like to talk with the nurse about something which he had mentioned several times before. He started by saying, "Now, B., don't you think that A. is awfully tiresome?" When the nurse admitted that A. and all the rest of the group were tiresome but all in a different degree, the patient smiled and said, "Yes, I know that; and I am trying to get so I will not talk sharply or crossly to A. when I have to talk to him." He added that he was getting to see many good points in Z. that he had never seen before, to which the nurse replied that he would soon begin to see some good in everyone, that it was only a matter of properly adjusting himself to his surroundings and getting to understand the different dispositions. The patient said he was trying hard to do this, but that there were some things that kept popping up every now and then that were disagreeable and did not appeal to him, but that after a talk with the nurse or physician he was able to minimize their importance. After such conversations the patient is generally more cheerful, appears to have gotten some mental relief, and makes a conscious effort to follow out the advice given.

Next day, on reading over his mail, the patient went around pouting like a child, and talking only when addressed. Later he said he had received several letters, all telling him of the good times going on at home and what he was missing. At dinner he seemed unable to hold in any longer, and told the nurse that he could not help it if he was grouchy when he got letters and invitations from the West telling him of all the good times going on there.

When told he should not allow this to depress him, but work all the harder to get better so that he could return and join in the good times, and in the meantime to rejoice that his friends were having such an enjoyable time, he said, "Well, what about me? That doesn't do *me* any good; I don't care about them as long as *I* have a good time." After a while he smiled and said, "Well, I suppose I am acting like a kid, but it makes me sore to be missing everything." A few hours later he had a mild attack. He was cheerful the following day, but it was evident that the slightest indisposition caused him to become moody, grouchy and uncommunicative. The next day he had a very mild attack in the early morning, and on recovering and being questioned by the nurse, he smiled in an offhand manner and said, "Oh, I had just a little attack." He at once became moody, and when spoken to by A. he made no answer at all. He went about showing his displeasure at everything but made no comments. The patient becomes very much depressed over the attacks, and blames himself for his weakness in not being able to ward them off. At the same time he admits that he encourages them to come on for the reason that it is a disagreeable feeling and better out of his system. "It is just like a sneeze, not at all pleasant coming on, but when over gives a sense of relief."

There is an excellent exposition of the wish motive in the minor attacks and the sympathetic pitying appearance of the person hallucinated, who is always his "good friend." When the attack goes deeper, however, the whole situation becomes unmanageable and he seems to retreat into a "goneness" that is often described as something that "draws him down or in." Often now during the minor attacks he suddenly thinks of someone—his mother, father, nurse, or some of the guests. He seems to be suddenly transferred to the presence of this person, who appears to be looking at him with a look of infinite sadness, which greatly distresses him. He does not know why he feels so distressed at the manner in which they confront him, but the persons that are hallucinated always seem to need his sympathy.

Three characteristic episodes that are quite instructive will now be incorporated in this patient's report. The first followed a rather prolonged effort of voluntary repression of his displeasure-affects toward the social group at the club: Symptoms of marked mental depression were present; the patient felt great resentment toward his fellow-guests, and the atmosphere of his surroundings became unbearable. He felt that he could no longer associate with his present companions, and desired most of all to be at home with his family, to return to work, and to live the life he was accustomed to living before he came under the present treatment. This feeling had been entirely absent for some time, but on this date it became so pronounced that he felt as if he could not stand it for a moment longer. He thought that being free from attacks for a longer period than ever before had brought about so much improvement that he could just as well spend his time at home rather than in the company of people he was not interested in and in an environment of depression and lonesomeness.

This feeling took the form of resentment against everything that caused him to be kept at the club. Some days previous to this acute condition the patient had a dream in which the doctor was keeping him in bed against his wishes; he rebelled against this, but was told by the doctor that although he might feel well it was better for him to remain in bed. (Thus he put the doctor in the wrong.)

The patient knew he was wrong in thinking that the existing conditions were not the best for him, but he had no power to stop the antagonistic feeling that seemed to be overpowering him. He felt as if he were being pressed from all sides, and everything seemed to tighten around him. To use the patient's own words: "Even the skin on my face, and in fact upon my whole body, felt tight; my mouth was dry, and my tongue felt rough and coated, and I frequently found myself clutching my face with my hands in a nervous manner. I lost interest in my surroundings and carried on my work in an automatic way, having only the one desire, to be home with my family. I found the greatest relief and comfort in being alone and enjoying my own company."

After a visit to the physician he felt better and this feeling of freedom lasted all the afternoon. The patient joined in work with the others, was cheerful, and talked pleasantly on all subjects that came up, and never once referred to the depressed feeling so marked before his visit to the physician. He was interested in his various duties and anxious to accomplish more than usual. However, in the evening while playiug bridge the depression and annoyance seemed to return, and he showed keen displeasure at the plays of his companions and told them what cards they should have played.

The following day he was again depressed; this feeling appeared slowly at first while he was dressing, but as he came in contact with the different tasks of the day and was thrown with individuals that were annoyiug and distasteful to him, it increased until it had all the characteristics which were so marked the day before. He became moody and silent, went about with an air of indifference, and answered in monosyllables, showing no desire to be pleased with anything. When in the company of those whom he liked he seemed more contented and talked less about himself; but manifested his displeasure to the others by answering quickly and sharply, and plainly showing that he did not desire their company. These symptoms continued throughout the day, the routine was carried out indifferently and the patient showed no real iuterest in anything but a strong desire to be left alone.

On the third day of the depression a trip to W—— was planued, to which the patient looked forward with great pleasure as a sort of deliverance from the people and surroundings that were so distasteful to him, and also to have the society of the guests who were most pleasing to him. The depression was therefore less marked, but nevertheless present, as noted by the sullen expression and manner in which he went about the morning's tasks. In the afternoon the trip to W—— was made, and this he thoroughly enjoyed. He shopped and went about the town with all his old-time happy mood, never referring to the depression so noticeable the earlier part of the day. He returned home

in time for supper and was agreeably surprised to receive a card from a favorite cousin telling him that he would receive a visit from him the following Sunday. He at once telephoned to the city to ascertain the time the cousin would arrive, and made arrangements for his reception at the club. This was done in an excitable manner and it was apparent he was in a state of suppressed elation, but when all was completed he was more at ease and felt that at last he was to have some "real companionship." He retired at the usual hour and slept soundly all night.

The next day, Saturday, the patient seemed to live in anticipation of his cousin's visit, and showed less the symptoms of depression that were hanging over him. He attended a lecture but was greatly annoyed at the actions of some of the guests, and remarked that it was a shame people of intelligence didn't have better manners. He made no reference to the depression, but was keyed up and under tension. In the evening he had two very mild psychic attacks. On going to bed he said that he felt better and knew he was foolish to be so depressed over conditions that were in reality not at all as he saw them. It was very apparent that the petit mal had lessened the tension to a marked degree.

Sunday was spent visiting with his cousin, and the patient appeared cheerful and spent the morning talking about home, former companions and all that had occurred since he had left home. He was greatly pleased that nothing unusual had happened during his absence, and that after all he had not missed so much. During the day the patient had three psychic attacks while with the cousin, which were so slight in character that no one but himself had observed them. In the afternoon a visit to a fresh air home proved a great success. He began to take a real interest in everything and to appear bright and cheerful when he saw all the children together and heard them sing. He was greatly taken with the parental attitude of the superintendent and his wife and the manner in which they looked after the children. His heart went out to them, and when they cordially invited all to return again, the patient was more than en-

thusiastic in accepting. He returned to the club for supper and showed no signs of the depression that had been present for the past five days. He was cheerful and happy, and talked pleasantly with everyone without any apparent effort. He states that he feels sure the slight psychic attacks allowed him to give in more and to realize that he was wrong; before the attacks occurred he knew that he was wrong, but could not give in. The attacks, therefore, played an important part in relieving the tension. He remarked that he would rather have the attacks and get relief from the depression, because they were over within a short time, while the depressed feeling would have to last for a long time if it had to be handled naturally.

Interest in things that were pleasing relieved this depressed state. Companionship of those who were of a pleasing type helped a good deal, while to be thrown in the company of those who were distasteful to him produced marked annoyance and depression.

The foregoing outline of a mental conflict and its favorable outcome would seem to be something as follows: On going to W—— the patient was able in part to get away from the disagreeable situation which had not permitted of solution; going to town and shopping, etc., improved the condition of his mental outlook. On his return to the club and getting the message from his cousin from home that he would make the patient a visit, he felt more of the displeasure modified. Two mornings after, the actual visit with his cousin in which he was told that he had not missed much at home, that many of the things he was interested in had not been much changed since the patient left, and a detailed account of how his father and mother were and how they had spent their time during the summer, was of great satisfaction to him. In addition to that, the occurrence of three or four slight attacks (which were conscious to the patient only and could not be observed by the others) helped to discharge still more the unconscious demand for relief from displeasure. Then the afternoon visit to the fresh air home was the final means of more or less complete release of the inner tension. There he saw children convales-

cing from various diseases, who were living under a régime somewhat comparable to his own; above all he was delighted with the superintendent and his wife who were in charge of the place. They were kindly disposed, rather elderly people, comparable to his parents. They talked with him in a very friendly and intimate manner, and this served the same purpose of the deepest release as making a visit home and seeing his own parents. Immediately after this visit the patient returned to his normal condition, without having a grand mal attack.

Change of environment is often a disturbing factor. In the next setting we shall see what influence the transfer of the club back to its winter quarters in the suburbs had on our patient.

With the departure of his favorite companions he at once turned his attention to clearing his room of all decorations, packing his trunks, and making all preparations to leave at once. As the date he was to leave was very uncertain, he became restless and faultfinding with the guests still in the house. Everything went wrong, his companions were irritating to him, and they had nothing in common. He kept to his room and talked continually about the unpleasantness of everything, and how he wished he could leave. It was then tactfully suggested by his nurse that it might be a good plan to visit his aunts in the city for a few days until his new quarters were ready. This at once met with his hearty approval; his countenance lit up and he became cheerful and happy. He could not get away quickly enough, and even hired an auto to take him and his nurse to a nearby town so that an earlier train could be taken to New York. On the train he was cheerful and talkative about everyday events but made no reference to the place he had just left or his companions that had been his favorite topic of conversation all summer. On the other hand, he frequently spoke of how glad he was going to be to see his aunts. Arriving in the city he rushed about to get the quickest conveyance to take him to the house, and on reaching there he kissed both aunts effusively and at once entered into a long account of the terrible conditions that had existed all summer. The

aunts listened attentively, but showed no assent to his views, and he gradually became less demonstrative toward them. In the morning he announced to his nurse that he was going to have things pleasant and comfortable at the club during the winter, that he was "not going to stand for any foolishness," and if things were not just right he would go to some other place; if the doctor did not approve he would go home. A casual visit to his new quarters aggravated his irritation; he found the house still upset, the room not furnished, and everything looked gloomy, the day being wet and foggy. He became depressed and said he knew everything was going to be unpleasant. He spoke of all this in an excited manner to his aunts on his return to the city; he even became demanding in his desire to be heard and to express fully his views. He again took up the subject with the nurse next morning, and the following plan was adopted: The patient was asked to describe all that was pleasant and all that was unpleasant about the new environment and surroundings at the club, and to give his candid opinion of everything as he saw it. The nurse explained that this was to be a trial balance of the whole difficulty, to find out just where the mistakes were and to devise some method from the result so that everything could be adjusted properly. The nurse made a debit and credit side on a piece of paper. On finishing the interview it was shown to the patient that he had a complete debit. He was asked if he thought this to be a truthful statement, if it could be possible for everything to be as wrong as he had pictured it. He thought for awhile without speaking; then tried to reply, stammered and blushed, and finally got up from his chair and paced the floor. At last he said: "Well, I suppose—Oh, I know I am wrong, but I can't help it, because it's my infernal disposition I suppose; that's all there is about it." The nurse then asked if the patient did not think there was a little good in everything, that some redeeming feature might be found in everything if one only took the trouble to look for it; further, that if the patient would only assume this attitude he would get more real pleasure out of life, as it was only by looking at the bright side that life was made easier, and by being cheerful

and making the best of things one gradually got a balance to his credit, and the more credit one obtained of this sort the better one would be guarded against the little trials that came up in daily life. During this explanation the patient lost his forceful, determined manner, became silent and submissive, and agreed with the nurse in everything. He said, however, that he thought normal people would view the situation in the same light as he did. While he was assured that this might be so, it was pointed out that his attitude toward the facts and his reactions toward them were unnatural and harmful, and that normal individuals did not allow such trivial matters to annoy them but found means to adjust to all conditions. The patient then became more cheerful and promised to make an effort to do his part in being agreeable. He did not again refer to the conversation but on returning to the new quarters he showed his willingness to coöperate with the nurse and physician. He was pleasant and cheerful with his companions and became occupied in arranging his room and putting everything in order. He became enthusiastic over golf and tennis, his wood carving, and his music and took up his daily routine in a manly fashion.

A rather unusual outcome of such a conversation is shown in the patient's insight by his remark that he "feels such talks with the physician and nurse are just what he needs and that he derives great benefit from them." He says they "straighten him out and put him on the right road again." He shows an appreciation of how fundamental the defect in his character is, in an after-statement that he feels as if he would never get into such a fussed up state again when anything appeared to be so depressing and disagreeable.

I may say, however, lest one may think such lines of treatment are final and conclusive, within three or four days our patient had typical resistive dreams, which in turn expressed themselves or inflated the deeper unconscious to bring about a discharge in a series of psychic attacks and one grand mal attack a week after the close of the above incident. But the whole epileptic reaction was much less severe and disabling than any other for several months past.

It is important to note the disastrous effects in the reverse

of gentle wise training-treatment in such individuals as our patient. Through a peculiar misunderstanding the nurse "drove" our patient for two days at rather top speed in every way, almost duplicating the type of bad care and inattention such supersensitive individuals receive before their first attack of epilepsy. The enforced plan of daily routine chanced upon a Sunday, on which day it had been customary for the patient to rest and take it easy. As usual on this morning, he made preparations to remain in his room, to read the papers and write letters. At this juncture he was called upon to take a long walk with other guests at the club, and he hurried to finish the letter he was writing. The pace on the walk was extra severe, and he was rushed along mile after mile. He managed to keep up pretty well after the first mile, and although he tried to appear cheerful he began to grow rather silent in conversation and worried lest they might be late for dinner. They covered about seven miles, and, as the patient predicted, they were late for dinner. He had a ravenous appetite after the walk, but was not allowed to satisfy it by extra helpings as usual. He looked disappointed, but submitted in silence, and went to his room to write his belated correspondence and read the morning papers. He spent but an hour or so in this easy atmosphere, when he was asked to go for another little walk. He now began to complain, saying he felt tired and had other things to do. He finally submitted with apparent reluctance and walked four miles more. Although he was neither sullen nor displeased, it was seen that his good feelings were "wearing thin." He now remained quiet and started no new subjects of conversation and evinced no interest in the topics brought up by the nurse. Nothing unusual happened during the evening, as he was allowed to do just as he pleased. His various remarks and comments were disputed but he showed little annoyance at such criticism. He went to bed and slept well. The next morning he was inclined to be uncommunicative, his replies were brief and it was quite evident that he did not wish to talk. His face was a trifle pale and drawn, and he appeared preoccupied. He soon showed that he wanted to be left alone,

and that he wished to initiate the usual routine of daily duties himself. He began to question the nurse's suggestions and wanted various plans of work modified. He said: "I feel as though I want things to go along smoothly today, and I'd rather this scheme be followed rather than what you (the nurse) have planned." When asked if he was not feeling well, he appeared annoyed and offended, and answered quickly: "Why, yes; I'm all right," which statement, however, was belied by his manner and facial expression. He then went about his duties silently and with downcast appearance. He sat at his desk until breakfast, which was unusual as he most frequently dresses quickly after his morning plunge and goes about singing and whistling, and joshing the other guests who are behind in getting up. He usually hurries downstairs, gets the morning paper and seeks the society of his favorite guest or takes a walk outside to see what the weather promises for engaging in sports. After breakfast he was not allowed the usual little rest but was rushed out on a mission several miles away. He was required to carry bundles and a series of questions were fired rapidly at him, put to him in such a manner that he was required to answer. His opinion was asked, and then disputed. He felt as though "he was being kept on edge" all the time, and felt pushed at a physical and mental pace to which he was unaccustomed. However, he stood all this fairly well, although he showed more desire to be let alone but without being moody or depressed. When allowed to stop for some music records and do as he liked for an hour he brightened up and seemed momentarily happy, but so soon as the lesson questioning was begun again on the way home and the pace grew quicker he fell altogether silent and sullen, and spoke only when absolutely necessary. Arriving home he at once lay on his bed and busied himself with his home paper. While he had not openly revolted at the treatment, he indicated by his attitude that the whole plan was not to his liking. Physically he showed his ability to stand even more forced exercising, but he began to show that it all interfered with his peace of mind. Now he began to be more listless, pale, and lapsed into a sullen and

morose state in which he seemed "to withdraw from his environment" and lapsed into long periods of deep thought. After his dinner he was sent with some of the guests he did not particularly like to a vaudeville performance. On his return he expressed his displeasure at being "forced to go to such a show in such company." It was apparent several times that he had other deeper objections to offer but which he fairly repressed. He spent the remainder of the afternoon by himself reading and writing letters. After supper he was a little more cheerful but was not his usual self. He was most at ease in his room alone. The next morning, the third day of enforced routine, he was plainly in his old mood of dissatisfaction and moroseness; in his words: he "felt sore and didn't have a 'good morning' for anyone." He showed great inclination to omit the morning exercises. He went about his daily task slowly and in a negligent, disinterested manner, speaking only when directly addressed. He had a sullen expression and answered sharply and in monosyllables. It was plainly apparent that he was on the verge of a "wave series," and a halt in the "enforced draught" treatment was made. He was allowed his own time to do his different duties. Still he showed that he thought everything was wrong. He was annoyed because "certain letters" didn't come; then, too, he would not join the golf club if he didn't hear that very day of his election. His expression was dull, eyes starey, and face pale. Tennis, his favorite sport, was suggested, but there was something wrong there; then a final straw was a suggestion to saw and chop wood. He at once asked in a pleading tone if he might wood-carve. Everything was made ready for the carving. The nurse helped him with the more difficult part of the work, the carving was hastened along and finished, and the tray which they perfected was sent as a present to one of the patient's friends. At first the work was begun in silence, but as it advanced he began to regain his spirits. He volunteered the information that somehow he felt better, a load was taken off, etc. But the latent feeling of irritation had been stirred too deeply to be gotten rid of at once. At the dinner

table he made a few cutting remarks, but seemed to gain added spirits as he did so, especially when he received no "scratch" in the fray. He then became a bit elated, jocose and boyish in spirits. He attended a football game in the afternoon and remarked that he was getting his balance again and that he had felt a growing dislike toward everyone and everything, a sort of disgust in his stomach, but it was now passing away. However, the great depth to which the irritation had penetrated still presaged itself in the night dreams. He dreamed he was wood-carving (favorite craft) and that he was conscious he was going to have an attack. The nurse was out of the room (a personal objection to the latter's attitude of the past two days) and when another (unfriendly) guest sought to call the nurse our patient showed anger and said: "You fool, I'm all right; I've gotten rid of it." The attacks are always used in the dream in their proper psychologic sense (to get rid of unpleasant things).

The next day our patient said, "I can't understand why that old feeling came up in my stomach for the past two or three days; I think it must have been on account of the weather, or something not going right outside my recollection now"—a bit of false rationalization common enough in the study of causes in normal individuals, to say nothing of a similar reasoning in the pathogenesis of epilepsy itself. It may be added that no attacks were incipient at this time and no attacks occurred for over 10 days after the above notes, nor has our patient been depressed or sad.

Even though for all ordinary routine affairs he has learned to adapt himself fairly well, the old irreconcilable attitude to uncongenial changes has not been fully met. While he may be rescued from ordinary epileptic reactions, such as epileptic attacks, long after these he will have minor contests that may be below the level of the demand for a fit reaction of the grand neurosis.

From the sketched outline of the foregoing case it is obvious that our patient has relatively the same inherent epileptic make-up as the mother—the inability to develop out of the infantile emotional life of the narcissistic period, ego-

tistic and supersensitive as it is shown to be. Further infringements of outside demands make such an individual break into tantrums, employ day dreams, later violent tempers and mental abstractions, and finally as the puberty and adult demands appear, one sees the epileptic reaction supervene with its well-known setting and peculiar mechanism.

It is interesting to note what the sister's reactions are, endowed as she is with a somewhat similar make-up to that of the brother. (See No. 3 on chart.) She also has the same kind of temperament and "can not bear disappointment." She is rather quick tempered, but has it more under control; as the disappointments or anger situations occur she feels keyed up inside and her knees begin to shake, and then she "undergoes a state of agony that other people can't realize." She gets square with things by letting the conflicts wear off, but there is always a feeling of resentment. She is very sensitive to her surroundings, and states that she can tell immediately when a person is not in good humor without looking at him. As a young girl music helped a good deal, especially when lonely or miserable. She now has a sympathetic husband who carries her over many difficulties; she has two children, the older one very much resembling herself. She says, "My mother is a dear, sweet woman, but it never occurred to her to try to understand her children, but to make them what she thought they ought to be. My father is different, and reason is one of his uppermost ideas; when he said 'No' he meant it. But with my mother there wasn't any sympathy or understanding; I miss it very much and have always regretted this lack of sympathy very keenly."

The sister met similar situations at home that the brother did; she frequently had a sense of being balked, but never went into a rage of the tantrum type. She argued a great deal more; and though she bore a great deal of resentment at times, she would argue and generally end the conflict in weeping if she could not get her way. She would fight it down or go to her room and cry it off. Once she wept a whole day, but when the parents would not give in and she

found she was the only one suffering and no one bothered about her, that she was simply working herself up for nothing, she gave in. She realized that in opposing her mother it was like "ramming against a stone wall." A great advantage in her handling these episodes was that she went forward to find some way out, to seek some solution that was endurable, as it were. She felt that she could not reason with her mother, and if she wanted anything granted she always went to the father and found it a great satisfaction to talk it out with him, even though she could not get her way. He would present the facts, and would then give her the privilege to decide; this, of course, was not the mother's method at all. The brother's conflicts were never adjusted this way, because he never went to the father.

While the spinal curvature might have been bad for her physical welfare, it certainly won for her some distinct respite from the mother's rigid moral discipline and she was soon sent away to a congenial environment in a sisters' school in a distant city. In regard to the slight permanent curvature not noticeable at present, she says, "Perhaps I am keenly sensitive because the curvature has been the greatest burden I could ever imagine—to be what I should not have been. For years I could not bear to go without a coat. I wanted to be a nun, and thought their lives ran so smoothly. Then I realized that the perfection they had reached was not 'real' life."

Regarding her little son (No. 6), three years old, who resembles her in physical and mental make-up, but who possesses characteristics identical to those of her brother (No. 4), she says: "Occasionally my little boy sits and dreams; whether he does it consciously I don't know; when we try to get him back to reality he refuses to be aroused for a while. He isn't restless, but sometimes, such as waiting for lunch, he just sits and dreams. I have been very careful with him; I don't want to stir him up to any great mental force and don't like to clash wills at all. I have never tried to break his will and have never spanked him. I had a nurse last year of whom he was very fond; one time she tapped his fingers for doing some little thing, and it nearly

broke his heart. If I speak at all firmly to him he will look up and say, 'You love me, mother, don't you?' and if not assured that I do, he will be all cut up over it and cry. He loves to play with his dolls and is happy for hours with them. Both of my children talk to their dolls and pet them, and never spank them." The boy often gets into a mental attitude which indicates he is about ready for a tantrum and says "I won't," then stiffens up, and "one word more" would drive him into a "physical as well as a moral cramp." Then he is taken by himself and a kindly talking to smoothes out the whole situation. The mother wisely says, "It is simply a matter of getting him to unfold his rigid will, and meeting the situation with gentleness is the only way to get around these episodes."

To summarize, we have here the grandmother with the epileptic character and reaction; the son with the same, the daughter with the make-up in greater part but with enough of the paternal characteristics and proper training under the father's guidance, together with a prolonged training away from home, to enable her to adjust herself to the various vicissitudes of "irritating reality" without epileptic reactions. A grandson with the apparently identical make-up his uncle possesses, is being trained wisely and sanely by his mother, and it would seem as though he stands a fair chance to avoid an epileptic reaction in later life.

Section IV.

Method of Graphically Recording the Mental Factors Precipitating Epileptic Reactions.

In the psychological study of the frank idiopathic epilepsies the question often arises, why may not one more or less definitely predict the occurrence of seizures in the individual case, especially when definite upsetting mental factors are in evidence?

Even if one were able to exclude the many inciters to attacks arising on a physical basis, such as are notably seen in constipated epileptics, the problem would still be far from a satisfactory solution. First, because the real motivation of the fit is frequently unconscious, even though an obvious, external and conscious cause of stress and irritation be at hand. Often a more or less definite upsetting episode, seemingly harmless in itself, produces or is followed by an attack, and frequently a trying situation is not followed by an attack. However true this may be, the fact still remains that a trained observer can tell rather definitely when an epileptic is about to have some sort of seizure reaction. These observations have not been handled with the degree of careful study the subject would seem to warrant. If there is a dynamic element in the modification of the daily routine of the epileptic that tends to produce or inhibit seizures, our subject may be of prime therapeutic importance. The attacks would then be viewed as a result of the degree and amount of mental perturbation which the individual epileptic can not ordinarily handle in a healthy manner. Obviously there are so many physical as well as psychical factors to be reckoned with in the individual epileptic's life that we can outline only in most general terms the relationship between upsetting types of stress and their sequential epileptic reactions. To compli-

cate further the task, the epileptic himself varies considerably from day to day in his ability to handle his difficulties. However, for some time in the past not a few observers have striven to record a parallelism between certain toxic states and epileptic fits.

I have thought it not unprofitable to chart some of the *mental* states in their relationship to the epileptic reactions. The charts are self-explanatory. It has been observed, when the patient is living in a mental state in which he manufactures his own interests, he is happy and contented and least likely to show epileptic reactions. When he is acting under the direction of a trainer and must be encouraged daily at his work and ordinary routine, he is more likely to have attacks. So soon as neither condition exists, he often falls into states of lethargy or day-dreaming, and when aroused may be irritable and angry, or sullen and illy disposed, and then attacks are not far distant. States of elation also have a significance in relation to attacks.

The charts are taken from actual daily observation; all these cases are under my personal supervision, and so far as possible the existence of physical factors has been ruled out.

CHART No. I.

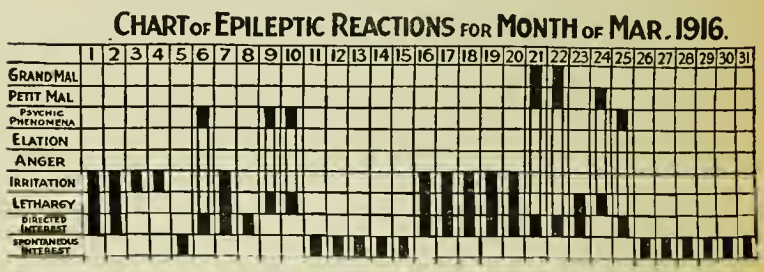

CHART I. Beginning March 1st, the patient's interest in the routine had to be directed; he preferred to sit in his room and read, becoming irritable when certain orders were insisted upon. This condition lasted up to the 4th. On the evening of the 4th he received a message from a favorite cousin telling him he would spend the following day with him. The patient went to bed in a very happy frame of

mind. On getting up the next day he was cheerful and remarked frequently that he was glad he was going to see "someone from home." The cousin arrived, and the patient at once took the initiative; he showed the cousin about the grounds, made arrangements for dinner, played the piano for him, and spent a very pleasant day. The next day, however, he was moody, and pouted when told to hurry along with the morning work. During the day he had two mild psychic waves. On the 7th it was necessary to direct him to follow out his daily tasks. He showed a desire to sit and dream, and became irritable when told he had certain duties to perform. The 8th showed a condition that still required direction, but no lethargy or irritation resulted. On the 9th and 10th mild psychic waves were noted, probably due to the suppression of the irritations some days previous. From the 11th to the 15th there was an entire change in the patient's disposition. He was cheerful, happy and contented; his interest was spontaneous, and he produced good work. From the 16th to the 20th a condition of marked irritability was present. Nothing seemed "just right." He did not want to follow out even the simplest directions, preferring to be left alone in his room where he spent his time trying to read although he could not concentrate; he sat and stared as if dreaming or in deep thought, and was irritated by being told it would be best for him to try to follow out the regular order of routine. On the 21st and 22nd complete attacks were noted. On the 23rd he felt greatly relieved but could not "get started," as he put it. He was allowed to rest all that day. On the 24th and 25th he had mild psychic attacks. This apparently relieved the patient completely, for he at once took hold of things of his own accord, as he had so noticeably done on the 11th, and for more than a week his interest was spontaneous and he showed a rapid improvement in all his work.

CHART No. II.

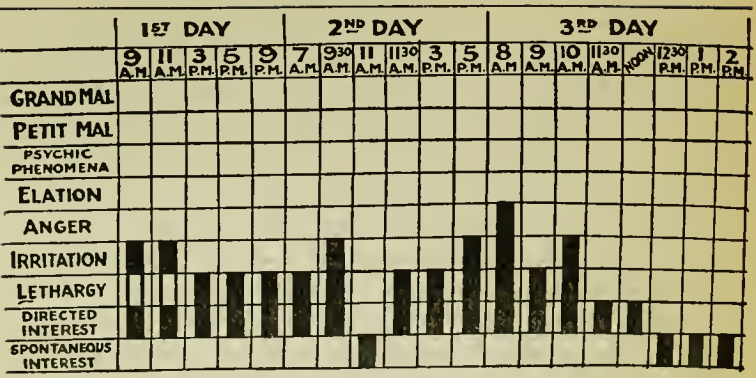

CHART II. It is important to note the disastrous effects of the reverse of gentle and wise training treatment in producing the type of emotional disturbances which are frequently seen preceding attacks.

Through a peculiar misunderstanding, the nurse "drove" this patient for two days at rather top speed. The enforced routine chanced upon a Sunday, on which day it had been customary for the patient to rest and take his ease. As usual, on this morning, he made preparations to remain in his room, to read the papers and write letters. At this juncture he was called upon to take a long walk, and he hurried to finish the letter he was writing. The pace on the walk was unusually severe, he was rushed along mile after mile, but managed to keep up pretty well. Although he tried to appear cheerful, he began to grow rather silent, and worried lest they might be late for dinner. They covered about seven miles, and, as the patient had predicted, they were late for dinner. He had a ravenous appetite but was not allowed to satisfy it by the usual extra helpings. He looked disappointed but submitted in silence, and went to his room to attend to his belated correspondence and read the papers. He spent but an hour in this easy atmosphere when he was asked to go for another walk. He now began to complain, saying he felt tired and had other things to do. He finally submitted with obvious reluctance, and walked four miles

more. Although he was neither sullen nor displeased, it was seen that his good humor was "wearing thin." He now remained quiet, started no new subjects of conversation, and evinced no interest in the topics brought up by his companions. Nothing unusual occurred during the evening as he was allowed to do just as he pleased. Although his various comments and remarks were disputed, he showed little annoyance at such criticism. He went to bed and slept well. The next morning he was uncommunicative; his replies were brief and it was quite evident that he did not wish to talk. His face was pale and drawn, and he appeared preoccupied. He soon showed that he wanted to be left alone, and that he wished to initiate the usual daily duties himself. He began to question the nurse's suggestions and wanted various plans of work modified, saying: "I feel as though I want things to go along smoothly to-day, and I'd rather we should do this than what you have planned." When asked if he were not feeling well, he appeared annoyed and offended, and answered quickly: "Why, yes; I'm all right." His statement, however, was belied by his manner and expression. He went about his duties silently and with downcast appearance. He sat at his desk until breakfast, which was unusual as he most frequently dresses quickly after his morning plunge, goes about singing and whistling, and "joshes" the other guests who are late in getting up. After breakfast he was not allowed the usual little rest but was rushed out on a mission several miles away. He had to carry bundles, and questions were fired rapidly at him, put in such a manner that he was required to answer. His opinion was asked, and then disputed. He felt as if he were being "kept on edge" all the time, and pushed at a physical and mental pace to which he was unaccustomed. However, he stood all this fairly well, showing more desire to be let alone than moodiness or depression. Arriving home, he at once lay down on his bed and busied himself with his home paper. While he had not openly revolted at the treatment, he indicated by his attitude that the whole plan was not to his liking and interfered with his peace of mind. He began to be more listless and pale, lapsing into

a sullen, morose state in which he seemed to "withdraw from his environment," and indulging in long periods of deep thought. After his dinner he was sent with some guests he did not particularly like to a vaudeville performance and expressed his displeasure at being "forced to go in such company." After supper he was a little more cheerful although not his usual self. Next morning, the third day of his enforced routine, he was plainly in his old mood of dissatisfaction and moroseness; in his words, he "felt sore and didn't have a 'good morning' for anyone." He went about his daily tasks in a negligent, disinterested manner, speaking only when directly addressed. He had a sullen expression and answered sharply. It was plainly apparent that he was on the verge of a "wave" series. A halt in the enforced routine was made, and he was allowed his own time to do his various duties. Still he showed that he thought everything was wrong. His expression was dull, his eyes starey, and face pale. Tennis, his favorite sport, was suggested, but something was wrong there; then the final straw was a suggestion to saw wood. He at once asked in a pleading tone if he might wood-carve. Everything was made ready for the carving, the nurse helped him with the more difficult part of the work, and the carving of a tray was hastened along and finished. This the patient sent off immediately to one of his friends. He then showed signs of regaining his spirits, and volunteered that somehow he felt better, a load was taken off his mind, etc. The latent feeling of irritation had been stirred too deeply, however, to be gotten rid of at once. At the dinner table he made a few cutting remarks, but seemed to gain added spirits when he received no "scratch" in the fray. However, the great depth to which the irritation had penetrated still showed itself in the night dreams. He dreamed he was wood-carving and that he was conscious he was going to have an attack. When the nurse was out of the room (a representation of his objection to the latter's attitude of the past two days) and another (unfriendly) guest sought to call the nurse, our patient showed anger and said: "You fool, I'm all right; I've gotten rid of it" (the attack).

The next day our patient said: "I can't understand why that old feeling (epigastric aura) came up in my stomach for the past two or three days; it must have been on account of the weather, or something not going right outside my recollection now."

It may be added that no actual attacks appeared at this time, and none occurred for over two weeks after the above notes were made, during which period the patient felt neither depressed nor sad.

CHART NO. III.

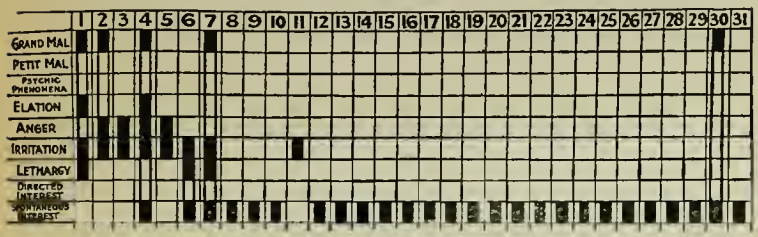

CHART III. On the initiation of the observation period it was noted that the patient had been irritable and in an unstable mood. She laughed at little or nothing, became exhilarated and talked loudly when in the company of others. She found fault with trivial things. On going to bed she had a grand mal attack. She passed the following day without attacks, but in the evening had another major seizure following a period which began with irritation, anger, and finally elation. Next day she was irritable and angry and refused to cooperate. The following day, however, there was an effort on her part to comply with the prescribed routine but later in the day her interest lagged and she became irritable, angry, then elated, and later had another grand attack.

On the 5th she was irritated at everything and became very angry when directed to certain duties. But on the 6th she again made an effort at readjustment and her interest for a time was spontaneous, but she soon tired, and lapsed into a state of lethargy which was soon followed by the old irritable state. The following day another period of spon-

taneous interest was noted for a time, but the irritability soon reappeared and she had a grand mal attack.

The next three days the patient appeared happy and contented, going about her daily tasks without being irritated or annoyed, but on the 11th she resented being told by her nurse she must act in a certain way when in the company of the other guests, that she must not be so talkative, etc. She became angry and irritable and remained in this mood for the rest of the day.

Following the reactions noted, there ensued a period of freedom from attacks for over eighteen days. During this time the patient was active and cheerful, going about the daily routine in a happy state of mind. She devoted herself to her music and tennis and cooperated with her nurse in every way. About this time her mother took exception to certain articles of jewelry and finery that the patient wished to wear. Her mother took her to task rather severely and the patient retired to her room and cried for over an hour. She finally went to her mother and said she thought she saw the matter in the right light and would comply with her request. This episode with the mother took place at 10 in the morning, and at 12.30 she had a typical grand mal attack.

CHART NO. IV.

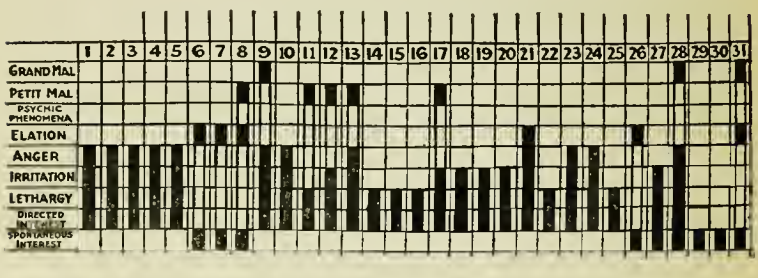

CHART IV. A fellow patient died at the Club, and this seemed to increase the irritable state already present when our patient arrived. She had dreams of fright. She became depressed and moody, sat about in a listless fashion, and became angry when told to follow out the simplest directions. This condition lasted from the 1st to the 5th. Then

for three days she tried to do as the nurse suggested and on each occasion became elated, laughed and talked with her nurse, saying that she, the patient, was a good girl and would do everything she was told; but the effort was too great, and out of the elated state there developed first petit mal and then grand attacks. She again became irritable, depressed, and made no effort to adjust herself, and the three days following she had attacks of a more or less severe type. The slightest difficulties seemed mountains to her. She complained constantly of everything and everybody. She would put her hands over her eyes, jerk her shoulders, clasp and unclasp her hands, and otherwise show the nervous tension under which she was laboring.

Then followed three days in which she was obedient, seemed anxious to please, and was solicitous of the nurse's comfort; but she soon tired of this attitude and became irritable. The next day she went through the same phase of trying to keep up with the routine, became irritable and then elated, and said: "Oh, my Lord, will I ever be like other people!" A slight attack followed, after which she became excited and angry. She became angry over a bill she had paid the newspaper man, and declared he was a cheat. She kept talking about it during the day and carried it about in her hand. Looking abstractedly into space she said to the nurse: "That bill—I am going to have an attack." She lost consciousness for a few seconds and then began to undress, next she twisted her body, putting her hands under her back and lifting her entire body, kicking her feet, and laughing and trying to talk. She was induced to lie down, when she assumed the fœtal position and went to sleep. From then on until the end of the month she made efforts to keep up with the daily routine, but found fault with everything, becoming excited, irritated, depressed and elated by turns, and had several attacks.

CHART No. V.

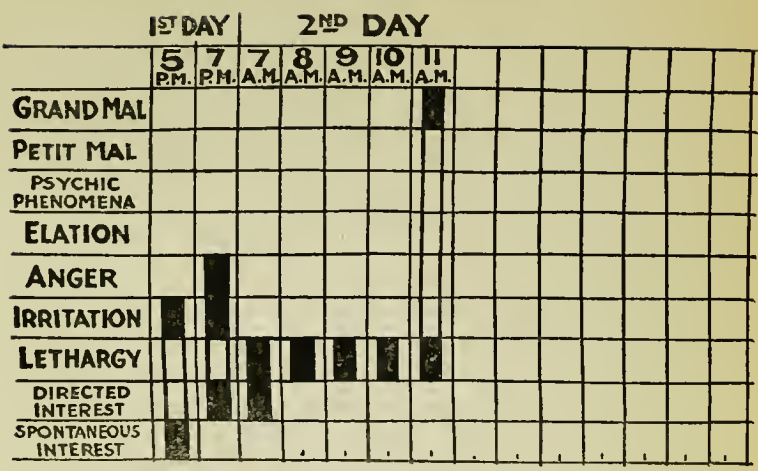

CHART V. The patient, aged 12, had been free from grand mal attacks for several weeks when the following incident occurred:

Boy-like, he had helped himself to some fruit which he was not permitted to indulge in. He was detected and censured. He immediately ceased his spontaneous interests and did poorly at directed ones. He was told he must apologize and restore the stolen fruit and that his comrades would be told of his misconduct. He made no effort toward handling the situation, was greatly dejected and experienced a keen mental anguish. He had an intense conflict with himself as to how he might get out of the situation rather than take the simple course of acknowledging his fault and making apologies, thus regaining the usual friendly relations of the people about him. He wished especially not to be shamed in the eyes of his boy companions. In this state of mind he went to bed. He moaned and tossed in his sleep, and on waking next morning he was listless and indifferent, refusing to follow the ordinary routine. All the forenoon he continued to be lethargic and indifferent, gaping and yawning, and at 11 o'clock had a grand mal attack. Immediately after the attack, although he had made no effort at adjusting the difficulties, he appeared greatly relieved and went

about his routine duties as if the whole matter had been quite removed. However, he was not amnesic for events that had occurred.

The foregoing system of charting epileptic reactions shows that it is not only feasible but desirable that each and every case-history should have a similar graphic chart for easy reference in the case summary. Inasmuch as the fundamentals of the tantrum reactions of the "difficult" child are embraced in this scheme of chart recording, it is obvious that this method might be extended for use in other types of reactions simpler than those leading up to epileptic seizures.

Section V.

EXPERIMENTAL STUDY OF THE MENTAL RESTORATION OF A DETERIORATED EPILEPTIC.

As has been suggested a number of times in this study, the deterioration of the epileptic may, in some measure at least, be dependent on mental factors—on the maintenance of his interest and habit reactions. In so far as this is true, the clinical picture of this deterioration ought to be modifiable and the best material with which to demonstrate this would be a case where the epilepsy comes on late in life where a fair foundation of mental habit has once existed on which to build.* An excellent opportunity for such a therapeutic attempt presented itself some three years ago in the case of a man who had not developed his convulsions until his 38th year but in three years had shown

* The plan of treatment was aided in no small part by the experience obtained in the recovery of V. A. S., a chronic deteriorated epileptic, mentioned first as Case II in my article "Curability of Idiopathic Epilepsy," published in the Archives of Internal Medicine, January, 1912, Vol. 9, and detailed in "The Nature and Pathogenesis of Epilepsy," N. Y. Medical Journal, February 27 to March 27, 1915. In this case of extreme memory and habit disorganization a simple and sensible scheme of re-establishing a series of spontaneous interests was successfully made use of. This case was also commented on by Dr. John T. MacCurdy in his article "A Clinical Study of Epileptic Deterioration," PSYCHIATRIC BULLETIN, Vol. I, April, 1916, p. 257. In this article MacCurdy, in addition to giving an excellent descriptive study of epileptic dementia, also discusses the possibility of mental factors having a share in the development of the deterioration of some epileptics, and for the first time, he formulates the mechanisms by which these mental factors may be conceived to operate. A study of MacCurdy's paper is therefore advisable in connection with this account of more empiric treatment.

grave dementing symptoms. In the absence at that time of any work on this aspect of the disease the treatment adopted was purely empiric but the results are no less instructive on that account. Unfortunately he died of a grippe pneumonia (March 5, 1914) after eighteen months of treatment, so that we can not say what the ultimate results might have been. The aim of this report is, therefore, not to claim a specific therapy for this condition but merely to demonstrate how accurately his improvement ran parallel to certain psychotherapeutic experimental measures.

His *family history* showed a definite heredity of feeblemindedness and insanity but no definite epilepsy.

The *makeup* was distinctly of the epileptic type. In school he was slow in acquisition, particularly with those subjects which required concentration. It is important to note that his favorite study was drawing. He was abnormally sensitive in the school period of life, "feeling hurt for days" when criticized, and reconciling himself to discipline only with great effort. Later in life, when confronted with mistakes, he tried to make good his excuses and if this failed would become abusive, excited and finally absent himself for hours from the troublesome environment. He had few friends because he was hypercritical of his acquaintances and insincere in his protestations of affection. What superficial intimacies he enjoyed never lasted long, as he was too self-opinionated to maintain these friendships. In his earlier years his chief interest seemed to lie in fussing about his home, while later in life the interest centered almost entirely on his father's business, which it was expected he would inherit. He never paid any attention to games or sports of any kind. In general one might say that he was preponderantly self-centred with little ability to objectivate his interest or get in rapport with others.

It is hard to say when his *epilepsy* began, for, years before convulsions occurred, there were mental changes highly typical of that disease. This deterioration had a gradual onset, the abnormalities of his character passing imperceptibly over into definite symptoms. On leaving school there became evident an increasing difficulty in cooperating

with others and he grew steadily less able to adapt himself to new situations. His sensitiveness increased to a morbid degree, for on slight provocation he would turn irritable, abusive and finally lapse into sullen silence, not speaking to the offender for days. Naturally, with this, he became less respectful of the rights of others and much less tactful. Coincidently, his interest in matters not directly affecting himself grew steadily narrower. His business—his whole life—contracted into routine ; he was finicky in demanding order and precision. Frequently he lapsed into day dreams of living back at home with his mother, although he was married and had children of his own. Interest withdrawn from the world around him centered on his own body ; he became hypochondriacal. Worry over his health often led to restlessness and then long periods of sullen, moody silence.

Life was becoming too great a strain on him and at 38 his first *convulsion* occurred. The circumstances are significant. He spent a large part of one day at a business conference where he had great difficulty in controlling his annoyance at what he called the "pig-headedness" of his associates. Before the meeting was over he became pale, restless, trembled and had a headache. During the day he had taken little food, went home successful, but still worrying about the outcome of his schemes, ate a hearty dinner and then had a grand mal attack. His subsequent seizures usually showed similar prodromata. They repeated themselves with ever increasing frequency, reaching a rate of two a week.

The mental changes, which up to this time had been slowly progressing, now advanced at greater speed. He totally lost his ability to adapt himself to anything outside his business; interest in general activities went with the loss of adaptation and soon the business itself ceased to attract him, although this was the last interest to disappear. Intellectual degradation set in, for pari passu with loss of interest his memory faded out. He was reduced to staying at home, paying no attention to anything except to his appetites, disregarding even his family. With this inactivity he naturally began to suffer physically.

He came to me for treatment after the convulsions had been present for three years. It was found that he had a poor circulation, flabby musculature, enterocolitis and serious constipation. Mentally he lacked any spontaneity, was dull in appearance and had such a memory defect that he could retain a simple fact no longer than a minute or so.

The treatment, as has been said, was purely experimental. The first efforts were naturally directed towards improving his physical condition. This period lasted for six months and, during this time, although he became bodily well, there was no result, so far as either his convulsive or deterioration symptoms were concerned.

In the next period of eighteen months (terminated by his death) the treatment was focussed on the mental aspects of his condition This, for some time, seemed a hopeless task. The usual routine occupations failed to awaken a spark of enthusiasm in him. He was put at cutting wood, wood-carving, shop work and handicrafts of various kinds but all to no avail. He neither showed any interest in them nor did his convulsions diminish in frequency. A whole series of occupational studies were tried—travel and nature studies, horticulture; these, too, failed of result. It now became evident that nothing could be grafted on him, so the more rational scheme was attempted of reawakening his strongest interests, of appealing to what had previously meant most to him—his feeling of self-importance and his business. This was successful and, as his intellectual processes began to accelerate, the simpler stimuli were made more complex.

Inasmuch as he had shown considerable capacity for drawing, it was thought this would be the best method of inducing a mental reintegration. He was asked to make maps of his own town from memory (he was now living in another part of the country under treatment). Day by day he was led to make them more and more detailed, drawing in houses, roads, etc. The first map he drew showed only crude outlines with practically no details. After he had made a map of his home town, he outlined similar detailed drawings for two other places. It was customary for him

to move back and forth every six months from the country to the city. His capacity to remember the city, which he enjoyed much more than the country, was shown in the ability with which he mapped the former. In the city he had more social life, and it was more like the type of his home town.

So soon as his interest became thoroughly aroused in map drawing, he became sociable with the other guests, and explained the community life that went on in the various places detailed on his maps. Whereas before he had always been very retiring, he now began to engage in conversations with others in the group. His main topic was his maps and the things they suggested relative to business and society. This created his first spontaneous topic of conversation.

As a young man he had shown a great interest in atmospheric conditions, the tides, etc.; he was now induced to get a barometer, whose readings he took great pains to record morning and evening. The significance of the barometric changes had been one of the chief topics of conversation at home as they had a direct bearing on the family business. All these little attentions revived his interest in his home surroundings and his earlier contacts with life which he had so negligently allowed to fall away. At this point he began to show some insight as to the manner in which his mental disintegration had come about, and spontaneously began to undertake more self-direction in carrying out this training treatment. He turned his attention to reviving his memory and took more heed of the latter than of the occurrence of attacks which had before filled his whole horizon.

His interest still ran in rather slender channels, for wood-carving easily fatigued him because his interest in it was not keen except in so far as he saw a possibility of utilizing it in his business. While carving, he day-dreamed and watched the clock, waiting for the end of the lessons; and had more frequent attacks at this occupation than at any other. However, when he carved a chest for his family, placing their coat-of-arms on it, he worked very hard.

Carving then had an attraction for him, which it never exerted before. All handicrafts still remained quite secondary to his interest in map-drawing, especially in what concerned the exact location of his manufacturing plant and all the details of the family home and those of the employees in the village. Continuing the map work, he drew it to scale and outlined all the ground plans of the manufacturing plant. The latter was very difficult and had to be undertaken for very short periods of time. It seemed to fatigue him greatly to recollect the exact proportional relationships of the various machines in the shops. He liked the work nevertheless, and so soon as he began to do it fairly well, he became much elated over the accomplishment.

The improved mental attitude and interest in regaining his memory were soon reflected in the lessened severity of attacks and their much less disturbing influence upon his daily activities and interests. After several months of this educational training his sociability was noted towards others outside the immediate household where he lived. Although he was still unable to talk on varied subjects, he showed a willingness to take an interest in topics that were related to those he had talked about at home. An ambition for a friendly contact with a larger group developed him, and to re-establish the social ties previously allowed to lapse, became a sort of mania with him. The desire, however, entailed new work; in order to do this well he had to remember many things that were not even remotely related to the subjects which had been discussed in his home. In other words, he had to remember incidents about which he had no particular personal concern. He had to cultivate a liking for subjects because the new acquaintances liked them. This task was very difficult, but still he persisted as it was essential to the fulfilment of his aim. In order to encourage this tendency of rebuilding his social contacts, he was given a little book in which to jot down the names, characters, and subjects of interest which his companions possessed. He spent much time in going over them, and sought continued tutoring in recalling these data. Even

after several months of this training he had to be prompted, like a reciting schoolboy, with a name or a sentence from the book before he could undertake these new conversations. The amount of memory defect to be overcome may be justly estimated when it is stated that at the beginning he could not remember a single name of his household associates with the exception of his own nurse.

In the last six months of the training, he began to take more interest in plays and various forms of entertainment. At first he paid attention only to the personnel in the play productions. So soon as he was able to recall the substance and thread of the plot, he showed a genuine enthusiasm in the performance itself. He never cared for moving pictures as the rapidity of action was too fatiguing; the sense of the play was received only through the one avenue of sight and he could not grasp the meaning. To increase his fund of ideas his companions often asked him to give them a résumé of the different acts he had seen and what he considered most interesting about them. This scheme enabled him to have something definite to contribute to his friends, and it increased his own confidence and self-importance. Of course the things he remembered at first always had a more or less personal interest. It was interesting to note what a lopsided view of plays he took. His description often tallied poorly with that of other individuals who had witnessed the same productions.

Not the least interesting aspect of his methods, in reawaking his long disused memory, was the cleverness with which he would either find out the main facts which he had lost, or avoid those issues in conversation. If he lacked the connecting link of a particular name, or the time a certain thing occurred, he would adroitly get these facts from his companions and then launch the entire conversation to suit himself. The requisitioned data were always furthest away from the concrete and usually quite removed from his personal interest.

His daily reading gradually extended from an almost complete engrossment in his little home paper to world-wide affairs gleaned from the city dailies, and his interest in the

activities of the people employed in his manufacturing plant gradually widened.

The influence which this improved mental state had upon his everyday life was interesting. For instance, the habit of gorging himself with food gradually lessened—not that he cared less for it, but because he noticed others did not do so. He desired to conform to the regulations which others adopted. He did very well on a lighter diet; he was able to eliminate many of the heavy meats, and lost entirely his former habit of over-indulging in sweets. His habits of dress also changed. So soon as he became more observant of people about him, he gave up wearing clothes cut only in certain styles. His manner of dress was less rigid and more easily adapted to season, time, and place like that of others about him.

As his memory continued to improve and the scope of his interest increased, he realized the necessity of getting rid of his disorder so that he might again resume his position in the firm. As he gained a better insight into his innate defects of memory, he saw how necessary it would be to rid himself of them as well as of the attacks. Formerly he had thought that all he had to do was to return home and take entire charge, when he would be able to handle everything without counsel or advice. Latterly he remarked, "I see now that I can't keep up with the business, but I feel I could be of help to my brothers. Of course I would not attempt to carry on a third partnership. I would do the things laid out for me, that I could do and yet keep my health."

One of the character alterations, last and least changed by the treatment, was the feeling of sympathy with and confidence in those concerned with improving his physical and mental welfare, a characteristic so constantly absent in epileptics. It always seemed difficult for him to desire a completely sincere and sympathetic relationship. The central core of his egoistic attitude seemed to preclude the possibility of attaining this high attribute; in consequence his social rapport, even when the treatment had been long maintained, was often not very strong. It could be easily

broken by the slightest feelings of suspicion or distrust. A seeming carelessness or indifference on the part of the individuals concerned in helping him with his problems was almost immediately widened into a chasm, and if allowed to endure for long seemed to constitute an impassable barrier to further progress. It showed that the fundamental fault in his instinctive makeup had been by no means slight.

How far his progress might have gone had he not died one can not say. It must be admitted that here, as in similar cases, the defects in the primary instincts retarded progress. One often fails in restoring memory and reforming habits, or at least in bringing them up to the standard of normal reactions. The very nature of the character defect from which the epileptic suffers precludes this consummation. Undoubtedly the retention of mental stability in the epileptic individual (as in ourselves) must ever be conditioned upon a willingness and desire to lose nothing of original endowment and its after-development in adolescence.

To summarize the case: We have here a man whose primary endowment of the epileptic character precluded a normal and stable adolescence. In adult life when the stress of social and business adaptations became too great, his imperfect character development began to deteriorate. This deterioration went on for years. For a time it was definitely noticeable only to those most immediately associated with him. First he had mental reactions of the epileptic type in various social and business settings. As he grew older and the stress of work and home affairs increased, his defects expressed themselves in grand mal attacks of a classic type. Coincident with this mishap the physical habits on which the maintenance of good health depends, also underwent dilapidation. A severe form of chronic epilepsy soon followed and the patient presented evidences of a progressive mental deterioration. Under a hygienic living he slowly mended his physical health. His epilepsy and mental deterioration, however, remained unchanged until the mental training treatment above outlined was put in operation. In a period of eighteen months he regained

much of his memory and initiative. His mental horizon was broadened and his social interests were in process of restoration. His epileptic attacks were diminished to one-half of their former frequency and severity. The improvement, which was slow in the beginning, gradually extended from a pure memory rehabilitation to that of a comprehensive character restoration, and gave promise of even greater results had the experiment not been interrupted by death. The case has been detailed at some length to illustrate what may possibly be done for similar epileptic individuals even when deterioration is far advanced. Although many chronic epileptics may not entirely recover, one should not despair of improving their lives to the advantage of all concerned.

The objection might be made that the improvement in this case was not the result of the mental treatment but rather of a betterment in some obscure physical condition, the relative recovery with the treatment being a mere coincidence. No final denial of this claim can be made, nor is this case cited as an argument in faver of the exclusively psychic origin of epileptic deterioration. The object of the publication is to give an example of symptomatic improvement proceeding hand in hand with reawakened interest. If deductions may be drawn from this case they would be that no superficial nor perfunctory stimulation will benefit an epileptic. An inherent fundamental interest must be touched. Results obtained from this first effort may slowly be added to, by the cautious increase of demands on the patient's energy. Progressive improvement, however, comes only when patient himself begins to realize and conquer his difficulties.

Section VI.

A study of the mental mechanism by which arrests have been brought about in several cases of epilepsy.

Before an intensive study of the epileptic makeup was made, the character and temperament of such individuals were thought to be caused by the after-developing disease,

but, as has been shown by many careful studies, the instincts and trends of such an epileptic constitution antedate for years the onset of the epileptic reactions, and, indeed, are a part of the original endowment. It has also been held that the mental deterioration is a direct result of the seizures in spite of the fact that many cases do not deteriorate in a life-long epileptic career, while many other epileptics having few seizures deteriorate quickly. We seem to have laid too much stress upon the seizure phenomena in epilepsy as causal factors to the mental states attending the disease.

When it is shown that a particular epileptic has begun to readjust his bad adaptation to life, one is apt to believe the cessation of the attacks has accounted for the improved mental condition, but such a direct causal relationship can not be maintained, as the mental state often enough shows signs of mending before the frequency of attacks is diminished.

The apparent truth of the matter would seem to be that a better mental and physical adjustment enables the patient to meet the fundamental biologic demands of his existence more capably. The mind, therefore, improves, and the attacks decrease also.

In giving the following case notes, one should not infer that the ordinary regulations of diet and general physical health rules were not also used in treating and caring for these cases. But the outstanding fact is, that with the institution of the latter alone, the symptoms did not especially improve until the mental treatment had been given. The importance of the latter is the point I wish to make in this section, a study of the end results in some arrested cases.

The first case is that of a man now 33 years old, whose epilepsy first became pronounced at 17 years, although he had petit mal at 7 or 8 years. With the exception of one attack three years ago, details for the recurrence of which will be given, this man has had an arrest of his epilepsy for the past ten years. He is the oldest of four brothers. There is no neuropathic heredity. The patient was a highly sensitive, crying baby; under a rather rigid parental discipline, he grew to repress his violent tempers and became quite "rigid" in his daily deportment. At 7 to 8 he got on

poorly at school. While he learned easily he had an intense dislike for his teacher. He grew pale and listless and soon began to have headaches, becoming very irritable. His sensitiveness grew apace; when punished he sullenly smothered his resentment, and "set his teeth." He steadily became more rigid in his cooperation with other children and soon had to be taken out of school at intervals. About this time it was noted that he day-dreamed. Finally, these periods of abstraction were seemingly replaced by petit mal attacks. The introduction of an entirely care-free life soon brought these absences under control. He then got along quite all right until he reached his 17th year, at which time he was ready to graduate from high school. Close application and the stress of keeping up with his class at this time engendered pallor, increased irritability and sensitiveness, and he finally had his first grand mal attack with tongue-biting and passing of urine. Thereafter in the next four years he had about a dozen grand mal attacks. He did poorly under any form of sedative treatment, especially at home. He had a restless, roving type of disposition, and he was permitted latitude in self-direction. He had vagabonded through different parts of the country on several occasions and was finally allowed to go into the Northwest, where he took up railroad engineering and became a sort of prospecting free lance in hydraulic work (developing water power for railroad companies). His memory, which before he took up this life had steadily grown poorer, improved; his dilapidated habits of life began to mend; and his attacks became less frequent, and finally ended. However, with the extra stress of forced work in surveying under a captious and critical "boss" he had one grand mal attack some three years ago. The steady increase of mental stress and harassment leading up to this recurrence was quite classic of its kind. Since this time he has kept himself well within the limitations of his capacity of endurance and has been quite well. In a recent communication he states that he now knows what he must do to remain well and he intends to keep well by leading the "right kind of life." From being a rather morose, solitary individual, sensitive and irritable

and egoistic, he has steadily widened his fields of interest and vital contact with his fellows and is a fairly good "mixer," as well as an expert autochrome photographer in what he terms "God's country."

We may summarize this case by saying we have here a boy with a not very intense epileptic makeup, who under the stress of a too rigid and demanding school and home life developed epileptic reactions of a mild type. Under a freer life of spontaneous interests he quickly recovered from his seizure reactions, but when the stress again became too severe at 17 years of age, a definite grand mal epilepsy ensued and continued till a broad hygienic life was instituted in a new environment. Even under this life régimé a relapse occurred when too much stress was again superimposed. I may say that although at present this young man shows a full arrest of his disorder, the latter might be reinvoked should he become indifferent toward objectivating fully his keen egoistic personality into a healthful life about him and also should he permit too great a mental stress to develop.

Case II is a boy of 14 years, an only child, whose epilepsy developed at 8. After a definite course of treatment and a cessation of attacks for nearly two years, he relapsed, but has been placed once more on the road to permanent arrest. The father's makeup was of the classic epileptic type yet he never had convulsive seizures; when a young child he had a tantrum which did not cease until his mother had given him her Easter bonnet, whereupon he tore it to bits with the greatest satisfaction. All the father's family were stubborn, egotistical and had bad tempers; they showed much psychic dilapidation and deterioration before middle age. Their mother had never believed in discipline, and all her children followed their free bent in behavior and conduct.

The mother of our patient is a keen, quick, resourceful woman; she has found it almost impossible to understand the physical and mental incapacity for quick and easy adaptation which her son has shown in the home and school life.

Our patient walked at 18 months and began talking rather late, at 2 years. He was a crying, difficult baby. He entered public school at 7 but did poorly there, being inordi-

nately slow and inattentive, and at the end of two years he was removed on account of "anemia and nervousness." At 10 he attended private school, but nervousness and attacks caused his removal.

The first epileptic attack came on after a period of prolonged mental stress in keeping up with his English classes. One morning while hurrying to get off to catch a train, he complained of dizziness and immediately fell into a severe grand mal attack. Attacks followed this first one at fairly regular intervals of every two or three months until January, 1914, after which time he had no attacks for two years.

In his early boyhood he was stubborn and quietly egotistical, and set out rather determinedly to win his own way. When reprimanded he was apt to sulk. Not having an agile mind or body it was difficult for him to get into good social contact with the school life. He would sit inactive, day-dream, and engage in vague childish speculations which, as he said, fairly compensated him "for the things he did not get out of school." Just before the first attack not only had school grown distasteful, but he thoroughly disliked the badgering, nagging teacher, who insistently urged him to conform to the routine of the class. He became listless, easily irritated, and "withdrew into himself" He then began to play less freely and spontaneously with other children. While the first attack slackened the pace at school, he still easily grew listless, tired, and dawdled on all occasions, taking hours to dress. He was quite rigid and nonadaptive even in simple things; the slightest misplacement of his belongings bothered him greatly. At the time he came under my care, some three months before the arrest of attacks, it was easily seen that his interest in life had flagged, and his school and home adaptations were steadily growing poorer.

First, he was taken from school and given a free restful life of open-air activities. As the tension gradually lessened he began to pick up games and sports that appealed to him, and finally to read books of adventure. He was encouraged to take up music and to practice what he liked. As his interest quickened, his application grew apace, and he

coordinated better. Finally he was able to ride a wheel and to ice-skate. He became more tactful and obedient without seeming to smother an inward resentment as formerly, and instead of withdrawing when reprimanded he now was fairly agile in finding substitutive reactions to get square with situations. He soon began to generate a spontaneous interest in mechanics; this showed him the necessity of gaining a better general education, and helped him to take up the latter with more zest than ever before.

After eighteen months of training treatment and in the absence of any seizure phenomena it was decided to allow him to return to public school, which was done for a full-time attendance without the physician's knowledge. He went back at the full-time work with the old dislike, although he was only six months behind the grade of his age. Things would have gone fairly well, perhaps, if he had had some special tutoring or a little more consideration from the teachers, who, it must be said, are often prone to be rather merciless upon a backward pupil. He was still poor in English and mathematics, and although he would have liked to engage in sports after school, the extra time required for his studies gave him little opportunity. The lack of a full amount of time to play, once not cared for, now became very annoying, and it was often difficult to get him to his meals when out playing with the boys. The school work gradually grew more severe; in addition to English and mathematics, in which he stood poorly, he strove to gain a standing in geography which would enable him to enter the final examinations. An attack finally occurred on December 26 (1915). Since this time the school life has again been readjusted, and there have been no attacks up to the present time.

First of all we have in this boy the makeup in which seizure reactions were induced by a too stressful demand at school. When he was withdrawn from this difficulty and placed in an ideal environment with a chance to develop spontaneous interests, he became responsive and began fully to adapt himself to a proper physical and mental adolescence. But when he was again thrown into the same

difficulties he broke as he did at first. He is now once more quite well adjusted in an environment comparable to that which brought about the first arrest two years ago.

It is interesting to note that while his many paternal relatives had the epileptic character in a great measure, they probably did not become frankly epileptic because, either by chance or design, the grandmother permitted them to escape many of the stubborn difficulties in behavior and conduct which no doubt, unpleasantly antisocial as they appeared, really seem to have allowed her children to escape a worse consequence had they been held rigidly to an exact discipline, as in the grandchild, the boy under report.

CASE III is that of a boy 11 years of age whose grand mal epilepsy has been in arrest for five years. He had attacks usually in a series of two to eight or ten, and had at least three or four status periods, in one of which he had 150 grand mal attacks in a single day, attended by delirium and high fever (103°). There was no distinct nervous disorder in the family, but all the father's relatives had the epileptic character in various degrees of severity. They were stubborn, wilful, had tantrums and rages, and committed acts of impulsive violence. They were fisher folk and at times had passed through a definite lawless career. Our patient was an only child. He had one convulsion at dentition. He was a crying, stubborn, difficult child. He attended school for three months, his first trial, at five years of age. It was not only difficult for him to apply himself while there but he was absolutely incorrigible and could not sit still in the classroom. Even now when taught privately he is able to study but an hour, and thereafter must be allowed to play and do as he likes. He was always quick and impulsive and extraordinarily overactive. For instance, in one of the half-hour private consultations with the mother he was allowed the freedom of a private estate; during this time he picked nearly all of the flowers from the private flower beds, stoned all the pigeons from the dovecote, killed a cat, broke a barn door, broke a whip, and smashed a child's cart. Additional minor destructions gradually came to light. The mother thought these defects

in behavior were not particularly unusual; she still believed her boy to be only a little less tractable than others of his age. Coupled with his unbounded egotism he was very sensitive and when reprimanded often cried himself to sleep even after the mildest chastisement. He always had to be the centre of any group in the family or neighborhood circle. He never played any game in which he could not be the leader. All during his early life he had violent tantrums and was so irritable that his parents could not talk aloud when he wished to go to sleep.

On close investigation of this crass egoistic and supersensitive boy, one finds he was treated with absolutely none of the ordinary child discipline. While it was possible for him to endure the demands of home life with rages and tantrums, when these later had to be repressed at school he could not subordinate these crude individualistic tendencies; first he grew listless, then more irritable and finally broke out into an uncontrollable temper, was punished and sent home. As his mother said, "I don't know what seemed to fret and irritate him so; while he was home *anything he wanted to play with we tried to get him. Of course going to school those three months must have started his trouble.*" His first grand mal attack came on one night after a particularly exasperating day at school, but he had been steadily growing more irritable and run down for a month before. After the first attack he still continued at school with all its steadily accumulating annoyances until a month later when he had five grand mal attacks in one night; since that time he has not gone to school. After the series of attacks, which frequently began on one side of the body or the other, he had exhaustion palsy for several days in parts most convulsed. After the status of 150 attacks the palsy did not disappear for a week. Before all the series of attacks he was unusually irritable, as if he "could not stand things." He would be harder to manage, was very fretful, and "nothing seemed to go right." But after an attack he would be quite cheerful and agreeable, and he acted as if he "had gotten rid of things." After a score or more of attacks had occurred following the

second occurrence of his disorder he was entirely removed from study at school as well as at home; his adenoids were removed and a course of active sedation with bromides followed without cessation of attacks. He then came under a still freer removal from irritative surroundings and all medication for the disease as such was discontinued. He was allowed to do just as he pleased, to go and come with his father in the fishing boats as he liked. In a few weeks the attacks began to subside but he still was very irritable; little or nothing still seemed to precipitate tantrums and rages, but the latter were not so severe or prolonged. As his mother said, "He no longer threw things or assaulted others with his fists and teeth."

His first spontaneous interest in his environment was in the management of a boat at 6 years of age. Then the attacks began to subside. He worked furiously at learning to row and to handle the sails on a boat until he was absolutely exhausted, whereupon he would lie quietly on the beach or fall asleep in the "net bin" in the fishery. Often he was so "dead with sleep" that he would be carried home and put to bed without waking and without supper. Gradually the tantrums and rages were brought under the control of the will and he could then be reasoned with; he began to ask to be taught simple reading, writing and arithmetic; but he wanted only so much of these studies as he found immediately necessary for him to know in order to carry on his practical understanding of the fishing industry, and any knowledge which he considered superfluous to meet this requirement made him restless, irritable and impatient. Soon after he began to read fairly well, he contracted the "catalogue habit." He also developed an interest in almanacs as they gave him knowledge by which he could make out the time of the tides and weather indications for the fishermen. At 8 years he had gotten so he could play in a fairly friendly manner with neighboring children without "scraps," and during the past year he has actually become popular with some of the boys, although he is still not a little feared for his former reputation of being a "bruiser." In a recent interview he says, "Yes,

I like to go to school (one hour of private instruction); I like the teacher; but I am down around the river most of the time. I go fishing with the men and boys and can do all the things most of them can." "No, I don't play baseball as there are too many kids around (meaning the game is too complicated in teamwork for him to submit readily to the rules and to take his turn at batting). There is more fun up the street, anyway. I like to be with the men better" (in that sort of group greater freedom is allowed him than there would be in a crowd of boys). "Can I scrap? Golly, yes! Sure, I can lick any boy of my own age; yesterday I licked one 13 years old. No, the boys don't pick on me; they leave me alone." From this one may infer that there are still important principles of social adjustments for him to make in the future. From precise tests one finds this boy is about three years behind in school study, but this is not necessarily a defect as ordinarily considered as he probably possesses that type of native shrewdness and common information equal to boys of his age if not in advance of them. Finally, his mother writes, "He is now more easily handled, easier to direct, less demanding and insistent, and he daily gains in docility. He shows improvement in conduct all the time."

Resembling his father and grandfather in disposition and temperament, he is naturally ambitious to be in the fishing business with them, although of late he has spontaneously become very much interested in electricity, and the workings of the wireless in particular. He has shown a very keen appreciation in reading electrical magazines on the subject. However, he never wants to read or be told any more of the theoretical part of any subject than he can immediately apply or use. In closing the history notes I may say that dietary treatment was given in general terms only and aside from an occasional laxative no medicines were given.

In a brief summary we may say that we have here a boy of the extreme classic epileptic makeup, the main character and traits of which seem to have been inherited from the paternal side, and that, when the subordination of the egoistic tendencies were required of our little patient, he

could do so only partly and with exhibitions of tantrums, rages, and the like. Finally, when he had to make the next social adaptations, away from home in the school training where even more was required, he could not do so without epileptic reactions of a violent sort, that of grand mal seizures. When the extra social demands of school and its intellectual requirements were removed he still continued epileptic both in character and behavior independent of grand mal attacks. Not until he found spontaneous interests in boats, fishing, and all the opportunities such activities gave him to objectivate his individualism did he begin to mend from his disorder. This boy will probably remain well from the latter just in so far as he is able to gain a good adaptive and adjustable outlet for his keen egoistic desires, or is able to submit to their blocking and accept other outlets or substitutes for them.

CASE IV. The next case is that of a girl now 22 years old who has been free from epileptic reactions for ten years. She had the worst possible heredity, including alcoholism, insanity, feeblemindedness and epilepsy in either one or both parental families. She was born a rather weak, puny child and continued so to her tenth year. Her epileptic attacks, grand mal and petit mal in character, occurred at 10 years of age. They continued at irregular intervals for two years, since which time she has had no evidence of her disease as such.

The circumstances surrounding the first grand mal attack at 10 were as follows: She had been in a girls' camp; the food was rather badly cooked and served, and our patient took great exception to this as well as the fact that she had to work in a garden a mile from the camp. After this "hurry up" work in the sun she was compelled to go to the gymnasium for routine exercises which she disliked intensely; then she had another long walk up a steep hill for her dinner. She hated the teachers and was easily provoked to stubborn resistances at "anything they said." She felt they worked her too hard, the work was monotonous and uninteresting, and she grew to hate the whole scheme of life. However, she repressed her dislike all she

could and said nothing in open revolt. She then began to sleep poorly, looked pale and drawn, and day-dreamed a good deal when she had the opportunity. Soon she began to have attacks of indigestion, and finally refused food and asked to be released from the camp environment. This request was delayed in the hope that she might satisfactorily adjust herself. Then the grand mal attack occurred and she was taken home. The next two grand mal attacks occurred while at home under less stressful circumstances, but the inability to adapt herself even to the home life to which she had returned from the camp was still in evidence.

It was noticed at this time that our patient had always had a peculiarly difficult mental makeup. She had had tantrums as a child and early thought that, being a member of a prominent family, she didn't have to like people "if she didn't want to." She was selfish but sympathetic, kind hearted but not altruistic. She could not cooperate with others and was very stubborn and demanding. As she now says, "As a child I always had to have my own way." She was affectionate toward few people. She was irritable and very sensitive. Her general interests and activities were perfunctory and childlike. She continued habits of biting her finger nails, picking her face, and sucking her finger on going to sleep until nearly 18 years of age. She was little interested in athletic sports and did poorly in them. Broadly speaking, one may say that her emotional attitude and behavior were childish, and even now she has many of these imperfections of development which have not been eradicated.

Upon this epileptic endowment, which was making for a poorer adaptation to the growing demands of puberty, was suddenly thrown the summer camp life with its crude country setting. The girl could not adjust herself to the new environment, and the extra stress entailed soon produced the epileptic reactions as just set forth.

At first the treatment was by drug sedation and repressive lines of discipline, but this sort of life and treatment seemed to deteriorate the girl both physically and mentally. As she now states, " During the period in which I was having

attacks my memory was poor and my general interests were few. During that summer I read one of Dickens' novels, but can remember scarcely any of it now. I got so I didn't care for anything or anybody."

After a year's treatment of the usual routine sort, our patient was removed from her rather artificial and monotonous city environment and placed in the country to do just as she pleased. In a few weeks she generated a spontaneous and continued interest in birds and flowers and spent all her time in the open. Then she underwent a self-education which was good although desultory. It extended gradually from the central interest of bird life to flowers, trees, and animal life in general. She then began to read and study about these subjects. Finally she undertook work embracing the care of flowers, animals and a vegetable garden. The latter, which at one time had been so distasteful to her, now became the main object of her interest, and this was due in no small part to the fact that the garden and animals were her very own. When this life began to grow somewhat monotonous and she had outgrown it, she was introduced to travel and history with the ultimate object of visiting the countries studied. This was undertaken and carried out with complete success. At the present time she is a strong, robust, intelligent girl who has a variety of home and neighborhood interests, duties and cares. She is never tired, listless or indifferent, and many occupations once done poorly are now completed with energy and dispatch. While the fundamental character makeup has not materially changed (indeed, never greatly changes in so-called cured cases; the voice sign is still present), our former patient is now capable of generating any number of spontaneous interests. Balked now and then by a too censorious relative, she is adroit in avoiding open conflicts and assumes fairly well the control and management of all her own business affairs. One can not help seeing in such a girl the possibility of a reestablishment of the epileptic reactions should some unforseen circumstance block or shear away the spontaneous interests plus a renewed imposition of an intensive mental or emotional stress. However, at

present the permanency of an arrest or cure in such an individual would seem fairly well assured. It is interesting to note that the relatives in this instance as well as in the case to follow are firmly of the belief that the "cure" was brought about by simple physical hygiene and that the gradually improved mental adaptations were of decidedly less consequence than the selection of this or that particular article of diet. This attitude is prejudicial to the patient's ultimate welfare and relatives should be gradually educated to the broader biologic view of the patient's treatment.

Case V is that of a young man now 20 years old who was epileptic for five years, and who has been free from any epileptic reactions for six years. There is an epileptic and neuropathic inheritance from the father's family. The paternal grandfather was a sharp, aggressive antisocial individual. He had violent outbreaks of temper and seemed never to be able to control them. The father had the same mental makeup but under the grandfather's training learned to handle and control it better. The mother comments that our patient "has much the same temperament as the father but controls himself much better than either the grandfather or father; although he has grown lately to express himself more freely, it is not a purely destructive willfulness but he goes ahead to show he is in the right." The mother adds in reference to her own makeup, "Once in a while I have a temper; as a child I had a furious one, and would get angry enough to knock a person down. I now have it under control. I got the better of it by gradually making up my mind; I used to be punished, and that made me very much worse. If I were shut out of the kitchen, for instance, I would go into a tantrum. If anyone questioned whether I was telling the truth I would fly into a rage. They used to tease me a good deal just to start my temper. I would take a book and throw it. That lasted until I was about 10 years old."

Our patient was born a rather weak child. He was a "lively, active infant" and a restless, crying baby. He required being "taken up a lot," was rocked a great deal and as soon as he was asleep and placed in his crib, would im-

mediately awaken and cry to be taken up again. His first attack of epilepsy came on at 10. He had already found it hard to study, and to concentrate his mind. He then began to "develop" a temper. He became very sensitive, stubborn and set in ideas relative to dress and food. He said little, but in getting him to adapt himself to the daily demands of living the mother felt she was "up against a brick wall." The repressed and inhibited attitude of the epileptic period of the boy's career is well shown in that the clash between the father and son used to be met by the son's sulking and grumbling. His mother states, "He acted as though he were crushed or had a sense of smothered resentment, but since he has recovered from his attacks he holds up his head and answers with spirit if he thinks his father's remarks are unjust, and then the whole matter is disposed of in short order. Formerly he felt hurt and angry when criticized; now he takes all things in an amused manner and often laughs at absurd demands." Just before his first attack he often said he felt under a great deal of pressure at school and was much hurt by the sharp criticism of the father when he did poorly at school. He began to look pale, lethargic and "day dreamy." He "braced" himself against the stress of home and school and finally broke down completely in a series of attacks.

The grand mal attacks were often 12 or 14 daily; he once had a status attack with temperature and several days of mental and physical prostration following it. His natural characteristics gradually increased upon him "whether he had attacks or not" (he was free from attacks for a year) until he became a morose, irritable, stubborn pedantic invalid. A sedative treatment of a very intensive sort seemed to increase the attacks and render him too stupid to sit up. He was so drugged that he hallucinated and suffered from extreme bromism.

First the sedatives were gradually withdrawn, the diet made simple and he was given free eliminative treatments of salines, colonic flushings, etc. Under a simple hygienic physical régimé the number and intensity of attacks were reduced but were not removed altogether; not until he

began to take a spontaneous interest in camp life, away from a too solicitous parental care and discipline, did he show an improved mental attitude and freedom from epileptic reactions of the "absence" type. Although he kept up some of the physical care routine, baths, naps, diet, etc., he got entire satisfaction in the manual and industrial training school which he asked to attend. Gradually he became more self-directive in his study and work and began to plan his own education and activities. He soon began to expand his interest in his father's business, a part of which he succeeded in getting under his own control and management. Slowly he began to pick up better mental attitudes toward sports and boy and girl associates. He can stand joking and is as free and agile mentally as the average boy of his age. The voice sign still persists. He says, "If people oppose me, I hold to my own opinion pretty definitely. I think I could have even more liberties and still keep my health. About five years ago mother had me pretty well under her control, but I didn't notice it; I didn't know what a good time was then. I got pretty well bored being around with the chickens but didn't mind it so much. It was more the gardening I disliked. I don't think I minded the routine and mother's attention then, because I didn't seem to have so much energy and I really didn't know what a good time was. At present I don't want to modify my diet. I really do pretty nearly everything I want now, and never have much irritation within the past two or three years even though I am not able to do things. I like camp pretty well. I belonged to a military company there, and am now considered a member of the First Regiment."

The mother was encouraged to allow her son to go to camp and enlarge his personal freedom as he seemed a little irritable and faultfinding; in camp he led a free life, and mixed in with men and boys. He ate everything, including mince pie and bacon, and gained in weight while there. He took long jaunts after which he would return to the camp quite fresh while the other men felt fatigued.

To summarize, we have here a young man who probably had a double neuropathic inheritance of the epileptigenic

constitution and who broke into severe and frequent epileptic reactions of an intensive sort as soon as the school and social demands became too onerous. When he was placed upon a physically hygienic plan of treatment minus the unusually large doses of bromides, he began to mend, but, as shown, this plan was not sufficient—not until he was given a proper outlet of his physical and mental activities in healthy spontaneous interests did he cease having epileptic reactions. It seems fairly conservative to say that he will remain well so long as this mental and physical régimé endures.

It is interesting to note that at least four of these cases under report had as bad a neuropathic heredity as it is possible to imagine. Indeed, I venture to state that the majority of arrested cases are recruited from the ranks of such epileptics. May it not possibly be due to the fact that the epileptic reactions in such are but the more intensive expressions of their natural inborn temperament and, as other bad mental traits, such as tempers and tantrums, are more easily socialized, and, indeed, are the only ones that can be?*

*In connection with the foregoing case-reports I may briefly cite a rather novel case of arrested epilepsy in a dog. Several years ago a skye terrier, probably between six months and a year old, was rescued from bad surroundings in the congested district of Suffolk Street in New York City where the puppy was in abusive hands. He had been having many attacks of what seemed to be grand mal epilepsy. He was taken to the country where for several months occasional fits occurred, but under the influence of better surroundings and kindly care the dog grew strong and well and the fits ceased so that for years the dog never had any more attacks. He was a great out-of-doors animal and never could be held even in a wagon but loved to run with the horse whenever the family who owned him went anywhere. On such trips he would race over the fields, bunting woodchucks or rabbits, becoming nearly dead with heat. It used to annoy his owner greatly to have him go on these driving trips because whenever a watering trough was approached the dog would swim blissfully in the trough and consequently the water would not be fit for the horse to drink from the dust deposited by the terrier. He showed, like all skye terriers, a great fondness for the water and when warm often ran off to the river to swim and cool off and drink. He has never had any more epileptic attacks. (Data furnished me by Dr. Edward L. Hanes, Rochester, N. Y.)

Section VII.

Some therapeutic suggestions on the mental therapy of essential epilepsy deduced from analysis of the material of this clinical study.

It is interesting to note that the modern therapy of epilepsy has many heritages from the past. Two rather recent therapeutic experiments have contributed the greater part of our present day attempts at the treatment of the disorder. The first had its advent with *Laycock's* introduction (1851) of the bromides as the ideal sedative treatment for epilepsy. I venture to say this therapy, while having important and distinctive advantages, has done more to obscure the nature and pathology of the disorder than any other factor of recent appearance. For more than half a century at least, the sedative treatment of epilepsy with bromides has prevailed, and despite every encouragement to look upon epileptic therapy in a more rational light, the bromides still usurp first place in any general plan of treatment.

An historical résumé of the evil effects of bromide sedation would cast shame on medical thought and practice of this period. During the past two decades, however, a more rational therapeutic theory has been making slow progress against the sedative conception of treatment. This physical therapy, of hydrotherapy, diet, cleansing enemas, and a detailed plan of work and exercise, is the principle of the latter advance.

Still more recently we see a generally recognized effort to introduce a rational psychologic therapy for epilepsy. One may say that this is really not new, and is in accord with the modern conception of mental hygiene and the more precise interpretation of the nature and treatment of the psychoneuroses and psychoses. It is simply a careful effort to understand the makeup of the individual epileptic and the mental mechanism of his disorder, and to apply broad yet specific principles of treatment. In making a special plea for this type of therapeutic approach, the fact is not lost sight of that sedatives and physical therapy, particularly the latter, are not without value. We wish merely to

insist on the limitations of this kind of therapeutic theory. The enlarged view will be more rational and also more humane, yielding not a little of value in the way of a broader psychologic and sociologic conception of this disorder. It must also contribute its share of enlightenment on many a similar problem in adjacent fields of mental therapeutics.

Undoubtedly the treatment of the primary and fundamental makeup of the epileptic must be our main concern as it is a defect which antedates the seizure phenomena for years. Next in importance for treatment are the epileptic reactions shown in behavior aud conduct disorders, which when carefully looked for, can almost always be found in a case of the essential disease. These latter symptoms are of daily occurrence in the potential epileptic and often give the physician and relatives most concern even after a frankly convulsive epilepsy has become firmly and enduringly established. Finally, as has been shown in the preceding sections, and elsewhere by other investigators, the seizures themselves often follow episodes of stress and disappointment which seem to precipitate the attacks. These need to be given more attention in future comprehensive plans of treatment. A certain degree of mental deterioration in the frank epileptic is a natural corollary or sequence of the epileptic character when care is not exercised to correct this tendency, and my own case studies abundantly illustrate this point. It would seem, indeed, that the diagnosis, treatment, and prognosis of idiopathic epilepsy can be properly made in future only by taking into strict account the degree and kind of primary, character endowment of the epileptic, and its modifiability under a system of training, together with an analysis of the seizure phenomena. Though this statement makes the seizure phenomena distinctly of secondary moment, a similar view has been more or less tacitly assumed by good clinicians of the past as cited in the beginning of this clinical study. To establish proper principles for the treatment of epilepsy, epileptologists must cease to give their attentions entirely to the occurrence of individual attacks and their treatment as such. When this is done, and only then, shall we be in a position to make a just estimate of the

extent and character of the disease and formulate a comprehensive plan of treatment. As a pure drug therapy for epilepsy already savors of quackery, so should a purely physical therapy grow more and more to be regarded in the same light.

Sufficient clinical experience is now at hand for us to outline more definitely the mental therapy of the essential disorder.* It will be remembered that the usual makeup of the potentially epileptic child is one of egocentricity, emotional poverty, morbid sensitiveness, and an instinctive inability to take on the adaptive social training as does the normal child in the home and school. A morbid exhibition of this latter defect is shown in the display of rages and tantrums. Such children should have special training from earliest infancy, and particularly by someone specially gifted for the task. Often this is best done by someone other than the parents. So soon as the keen individualism of these children comes into contact with an exacting or unyielding environment, it is expressed in rages and tantrums. Great tact is necessary to size up the factors of each tantrum episode and judge how they may be properly handled. At one time the child may be sidetracked by directing his interest into another channel; at another he may be completely ignored throughout the entire tantrum, especially if the child be too observant of the effect his conduct has on the family. One should be sure not to offer bribes or rewards for a restoration of proper conduct. Often such concessions are the first irreparable beginnings of a downfall of government and discipline. If the child is to be diverted to some other interest, this should always be supplied early and before any severe repressive measure is brought to bear. In these exhibitions of a balked desire, one should look upon the child's psychic activity as a continuously outflowing stream of interest unfortunately thwarted, which should not be dammed

*I do not mean to underrate the importance of chemotoxic and endocrinic research in epilepsy. A rational therapy based upon reasonably demonstrated results as such studies should be, will probably give us ultimate enligbtenment upon the "why" of the disorder. For the present, however, an interpretive therapy can be provided upon the "how" of the genetic symptomatology of the disease, along psychotherapeutic lines which can not help but be of immediate practical value.

or blocked any more than an active mountain stream. One should always be sure of having the alternative at hand before the main issue is repressed to the slightest degree. In the most difficult children it is best to teach the child to place his own inhibition on his bad conduct and direct his attention to the new object without coercion or too much outside persuasion. No tantrum episode should be allowed to pass without a friendly and sympathetic review of all the circumstances which led up to the disorder. Tireless and tactful restatement is necessary of the great *personal* loss the child himself has suffered in consequence. To be fully effective, every opportunity for right conduct at the tantrum periods must be fully coupled up with the actual personal disadvantage the child suffers from his acts. The issues in question must be plain and simple, comparable with the degree of mental development to which the child has attained. The explanatory period is often at hand long before one ordinarily thiuks it is possible. For instance, several children whom I have known have been given these simple talks in their third year, with much success. The plea of personal motive to right conduct in such children may be ultimately fortified by altruistic and social advantages, but these should never form the central core or main issue of training against tantrum episodes in their early manifestations. The absence of altruistic instincts, or their very rudimentary character in these children, is quite characteristic of the type. As regards the everyday or general behavior of these children, a stiffening of the will or a broadening of emotional inhibition should not be undertaken too early or too intensively. Such children are usually inordinately slow in adopting simple or mildly difficult adaptations, and in consequence fatigue unbelievably soon. I know a child who at 5 or 6 years of age can not bear even the slightest coercive direction for more than an hour or two without complete rest and frequent day naps. Children of this type do not always show their exhaustion in simple ways; they often look pale and haggard, pupils are dilated, or they grow lethargic, sit and day dream or slowly mount on a thin crest of hilarity easily broken by "squalls" of ap-

parently meaningless crying; or they may show gross motor incoordination and make unusually precise and rigid demands of deportment on the part of their playmates. The trained observer gets to know these varied signs of fatigue and is often able to lower their nervous tension tactfully by quieter play. Under one pretext or another these children may be persuaded to seek rest of their own accord, after the higher level of their activity has been gradually lowered. A tantrum is not far distant in the bored or tired egoistic child, and running counter to his playmates is one of the commonest means which he takes to break the intolerable situation.

However, one usually feels that to give so much attention to the crises of personal conflict which the epileptic child manifests, is again to really miss the main point of the training treatment. The fault is quite comparable in a way with the obsessive attention physicians, nurses and relatives commonly give to the epileptic fit in the frankly established disorder itself. Long before the child displays tantrums, one finds much slighter but equally obtrusive manifestations of mal-adaption to the simple processes of life. Often these children must be slowly and carefully inured to the unpleasant demands of hunger and fatigue, a failure of which is frequently expressed in the restless crying baby. One must more slowly accustom such children to the hampering and unpleasant contact of the clothing, which often forces them into stereotyped positions. The desire for riddance of clothing is so much a part of the instinctive life of the epileptic child that many seizures of the milder sort occurring in the later life of such individuals are attended by automatic movements of disrobing, which acts are often performed in a childlike manner. The potentially epileptic child should have less insistent demands placed upon him, and for shorter periods of time than other children. His preference for certain types of dress should also be taken into account and yielded to so far as practicable. An equally wise attitude may be assumed toward the bath and diet. If left somewhat to self selection and direction in many of these matters, such difficult children much more readily and safely mend their ways. The same principle also applies to

the type and character of play. The lesson derived from other children doing the conventional thing, most tactfully supplies a corrective influence which a parent or nurse may not exert. Frequently an incentive to reasonable conduct once planted by the right kind of associates bears more fruitful results than many and oft-repeated injunctions from the child's elders. A similar principle for handling the more benign types of conduct disorders in the normal child has long been recognized and practiced with advantage.

One may safely say that the method by which the child secures its first adaptations to hunger and fatigue, and to social adjustments of work and play with its fellows, should be a guide for the proper after-training of the potentially epileptic child. Sufficient data are now at hand to indicate that this primary endowment of makeup is probably always hereditary in the potential epileptic, and it often rests with us whether we shall allow it to develop to its logical conclusion in an outspoken epilepsy or by our attitude and manner of handling it prevent such development. A complete change of the makeup is probably beyond our power, but the modification of it should be our main concern in the future, if we wish to conserve such children from following an epileptic career in later life.

One may think that the infantile and child life are without stress and conflicts. However, one need but to remember what *Preyer* has shown, that the unpleasant feelings are greatly in the ascendency all during this childhood period. Even with the most careful nursing, diet, ventilation, and regulation of temperature of the air and bath, under the most favorable surroundings, it is not granted the average child to pass many days without suffering. How much more painful, then, must these discomforts be to such a supersensitive child as we are considering. Granting the above, what may one propose on the dynamic or positive side in the proper adaptation of the epileptic child? For this task one needs to study the child with greatest care. If the parents are incapable of a sympathetic understanding of what the child is striving for and his main trends of interest, then the work must be entrusted to others

possessing this gift. A system of ethics can easily be built up around almost any line of activity the child may select. One may note its presence in all races, even in those whose life activities are most antipodal to our own. It is the attitude of approach toward one's specific surroundings that matters,—not necessarily the things themselves. If our type of child chooses either a practical or an imaginative approach, then he should be encouraged to find a proper healthful adjustment to that kind of life. The incessant clamoring of the child for variety and novelty of interests is but the natural demand that is his birthright—to see as many of the different facets of life as possible. Our concern is not to limit these novelties, but to see that the child shall have a thoroughness of experiencing them. The very completeness with which the difficult child may be made to do this is the safest protection against day dreams, lethargies and like abreactions from his work and play leading to boredom and irritability,—the forerunners of rages and tantrums. To establish at the earliest possible moment a self-directive government in the potential epileptic child should be our aim. The end sought is really to have him learn to penalize himself and adjust his own capabilities and desires to reality. Frequent psychotherapeutic talks relative to his difficulties are of greatest moment, and these can be undertaken only by someone in full sympathy and confidence with such a child, and for good results one must carefully chose the correct time and place. An instance in point is the little boy (No. 6) casually mentioned on page 185 of this clinical study (PSYCHIATRIC BULLETIN, April, 1916).

In brief, then, the foregoing embraces the main outlines of some of the more important suggestions for the proper mental therapy of the potentially epileptic child in the home before the school age is reached. The proper inculcation of a good system of nursery ethics is by far the most important object in training such children.

While the scholastic training for all children must rest somewhat upon the same common grounds, the goal to be won for the education of the epileptic youth must be arranged to suit his peculiar makeup. The methods of

attaining it are quite distinct and special. For instance, where there is an intellectual defect coincident with an epileptic makeup the problem is to educate this type of individual somewhat as if he were feebleminded. Even if this is done, sooner or later there will be a distinct outcropping of the peculiar epileptic instincts that would demand a considerable modification of the school system; but while this class forms a large part of institutional charges, numerically it is not so important in the general run of epileptic children. The former may show further handicaps of mental arrest or even mental deterioration, forcing one to modify the school training very considerably. Often the purely intellectual training has to be entirely omitted and the whole time given over to tutoring the epileptic youth in social behavior. In other words, the school training for epileptics should be intensively individualistic and constantly elastic. The very monotony which the feebleminded enjoy in any scholastic training, is poisonous to the soul of the epileptic. The latter requires novelty and a wide range of educational appeal. Moreover, in a large number of epileptic youths the intellect, as such, suffers but little or no impairment, and the educational training which these individuals need is little different from that which is ordinarily given to normals, except that it includes adjustment to work and adaptations along ethical, moral and social lines.

On the whole one may say it is a great mistake to approach the problem of educational training for the epileptic, in its broadest sense, on the old ground that he is only a little less retarded than the feebleminded, because in reality his primary fault is his egoistic trend and an emotional poverty. These abnormalities affect his environmental rapport and often he suffers from a lack of intellectual stimulus because of a weakened attachment to reality. Simply because he is mentally retarded is no reasom for his education being placed on the plane of that for the feebleminded. The same might be said of the deteriorated dementia præcox patients whose psychometric test brings them within the middle range of the feebleminded. If the

schooling is like that for the feebleminded it should be possible to modify its routine so as to make it adjustable to the demands of the epileptic character. The retarded epileptic has such an irregular mental age level at best that he is not often capable of doing well in any large class teaching as does the feebleminded.

The differences between the feebleminded and the epileptic are by no means essentially purely academic. They are sufficiently common and far reaching to compel the attention of educators, and they should be particularly recognized by those who plan to place the two classes together in one institution. Should this plan be adopted to any large extent in this country, the innate differences in makeup and mentality of the two classes should be recognized, and proper classification made in the schools. The *laisser faire* attitude of slightly modifying a feebleminded school to fit the epileptic should not be allowed to prevail.

It is easy enough to see that epileptic youths who have very frequent attacks can make little use of any system of regular intellectual training because of the nature of their attacks and the amount of acute mental disturbance entailed. The attacks prevent a consecutive attendance at school, hence much of the education is rendered useless on account of the break in its continuity.

We find a system of educational training of most value in epileptic youths who have infrequent attacks, and have a fair intellectual endowment as well as ability to generate directed, and finally spontaneous, interests. Primarily the colonization of epileptics means most to these individuals. It supplies a continually interesting and varied environment with all the possibilities of modification from season to season, so that monotony and boredom can be avoided.

After the above rather negative views as to why the epileptic should not be given the treatment of the feebleminded type, let us consider the positive, dynamic aspect of the proper treatment.

The system of education in the schoolroom must be an essential and integral part of the occupational life of the epileptic, whether he recovers from his epilepsy or not.

What he needs is to have his educational training coupled up with the occupations in which he is engaged and which he cares about. For instance, those who are interested in agriculture should have a system of book instruction and class work that will make for a further elaboration and understanding of all the daily duties grouped around this particular type of interest. It is obvious that the maximum of school training shall be concrete rather than of an abstract nature, and along the lines in which the patient exhibits the keenest interest and most distinct capabilities. Abundant illustrations are furnished in foregoing case histories to show that the type and manner of school training should be properly adapted to the peculiar makeup of the individual child.

The greater part of what has already been said applies to the training of those children who may also show frank epileptic seizures during early childhood. The actual protection of the mental and physical integrity of the frankly epileptic child becomes doubly necessary when attacks have once commenced. First of all the child usually needs to be withdrawn from the average school which often furnishes the stress that is too much for him. A period of care-free existence should then be maintained sufficiently long for the little patient to recover his mental balance and the proper regulation of physical health. The pallor, nervousness, disturbed sleep and like symptoms are usually removed quickly under such a let-alone treatment. At this stage the real trial begins, because from this point on we must have two motives in operation in handling the patient: first, to remove all the too stressful situations which the patient has reacted away from in the attacks; and secondly, to begin a careful system of training in slowly accustoming the patient to types of stress which he must get used to if he is to make a proper adaptation in life when he has recovered from his more gross epileptic manifestations. The reconciliation of these two motives in a training treatment calls for the greatest discernment and tact. Often this can be initiated only away from home—especially away from either a too harsh and unsympathetic discipline, or a

too inconstant and overindulgent one. I have succeeded fairly well, however, in training the least neurotic of the two parents in many instances to undertake the proper training treatment for their epileptic child. But the personal sacrifice entailed is very great, even though the training treatment progresses satisfactorily.

There is a parallel in the training treatment of the frankly established epileptic and that of the epileptic child before the disease has become established. With the former, however, efforts must be redoubled and placed on a more adult plane. One should not rest content with the removal of a stress from the life of the epileptic youth, for this is only a preliminary treatment. If this let-alone principle only is followed, the situation which will soon develop will be but little less intolerable for all concerned than the original condition. If left to himself, the frank epileptic soon occupies himself with day-dreaming, lethargies, and all sorts of idle dissipations, which in their turn often beget more epileptic reactions.

One should study how best one may help the epileptic individual to objectivate his interest in work, study and play in accordance with his ability. To carry this into effect, the closest scrutiny of his emotional and intellectual interests is necessary. His environment, which in most instances may have been reduced in social demands, ought still to offer sufficiently varied outlets from which he must choose a number of interests and amusements. Probably no greater mistake is made than to tell epileptic individuals to betake themselves to the country and then allow the matter to end there. Many epileptics almost at once have an increased number of attacks and, what is still worse, begin to deteriorate mentally and emotionally through lack of proper stimulus. There must be a certain novelty in the occupations and amusements, and not a few to select from; hence the importance of epileptics being in a country environment not too dissimilar to that to which they have been accustomed,—only the tempo, as it were, is to be reduced. Some of the large public colonies for epileptics are richly supplied with such potential advantages but unfortu-

nately for economic reasons alone a number of highly trained and gifted attendants and physicians are not at hand to assist these more sluggish epileptics to get the proper start in congenial work. Lacking personal direction and attention, many an epileptic manufactures his own interests only after a long time, or not at all.

All frankly pronounced epileptics are doubly handicapped by their natural antisocial tendencies as well as by the epileptic seizures themselves. Such a temperament is a direct hindrance to the epileptic taking up a healthy interest in any life offered him. In the absence of a spontaneous interest, the remnants of former ones must be pieced together or new ones induced. This can be effected only by actually living in close contact with the daily lives of the patients, assisting and encouraging them to start the cold and uninviting task anew each day. Often before work and study can actually be put in operation the epileptic individual must be given many kindly explanatory talks concerning the treatment, the common-sense view taken of his disorder, and the method planned for its riddance. These talks have to be endlessly varied, and simplified to the individual's understanding. The friendly association which many another neurotic or psychotic may have with the nurse and physician plays but little part in dealing with epileptics. The very nature of their makeup precludes this, and the treatment is, therefore, at times most disheartening. Of course the unlikability of such epileptic individuals, and the physician's and nurse's failure to transfer their own deep interest to them, are proverbial. Still the task must be done in spite of the mutual unstable and weakened trend of sympathetic interest. Until a satisfactory talk makes the problem clear to the patient, little can be done. Even when the new régimé is fully inaugurated it may fail in a single day and the whole process of confidence and assurance must be reinvoked the next. A few gifted individuals may succeed in the role just detailed, but may fail in the next step of putting the theory into practice. The general dislike of the epileptic to perform sustained labor day by day is well known, and the faithful attendant

must himself participate in the activities outlined and in most instances must take the lead until such time as it can be borne without direction and guidance. Probably the motive back of the advice given in foreign text-books that the epileptic should live in a country clergyman's family is to gain for such invalids the varied and sustained cooperative interest of the family. Unfortunately in this country either the clergy are not inclined to undertake such work, or they are too illy equipped by nature to cope with such a delicate humanitarian problem. What is even more unfortunate, our country practitioners are often but little better qualified to understand the far-reaching importance of taking epileptic individuals under their personal supervision. To be sure, it implies an intense preoccupation in the minutiæ of the lives of such persons, but the issues can not otherwise be met if the profession is to assume the obligations. Perhaps a broader understanding of the purpose of modern mental hygiene will remedy this lack in the future. If so it will be to the lasting advantage of epileptics as well as many another mental invalid.

Just as we made note of the inadequacy of considering only the tantrum of the potentially epileptic child, neglecting the whole issue of understanding and correcting the lives of such children, so we may reiterate here the uselessness of exclusive concern in the epileptic's life at the time of or shortly before his attacks. To do so is to fail in a considerable number of instances, to lose a proper evaluation of the mental precipitating factors of fits, as well as to lose sight of the broader principles concerned in the proper mental treatment of the individual case. The immediate factors often found to make for attacks have already been illustrated by charts in a preceding section; suffice it to say here that such chartings are often of the utmost practical moment in shaping a training treatment. By avoiding these stressful factors and substituting other lines of activity and interests, one may introduce an effective mental therapy in many cases. There is rarely a case in which intelligent care in this direction may not signally aid one in formula-

ting a progressive treatment. Not a few therapeutic generalizations have been laid down in an article already published.*

Conclusions: One may summarize the results of this clinical study of essential epilepsy as follows:

(1) There exists a more or less definite type of constitutional makeup in epileptics which has long been recognized by many able neurologists and psychiatrists and this defect accounts in no small part for the so-called "predisposition" to the disease—a term in common use to-day. The essential defects of instincts are egocentricity, supersensitiveness, an emotional poverty, and an inherent defect of adaptability to normal social life in its broadest significance. The main defect is an inheritable one. This makeup is the primary or original mental endowment of the potentially epileptic individual. It is accentuated and made the more obvious by the further advance of the disease only when seizures develop. It is then often spoken of as the "mental stigma" of the disease. The attacks are not solely responsible for epileptic deterioration, but the seizures are themselves symptoms and exhibitions of the deteriorating disorders. The seizures do not always indicate the progress and degree of deterioration in any given case; i. e., the number and severity of fits in a given case may not be an index to the amount of deterioration, nor may one postulate the severity of seizure reaction in a particular case by the type of deterioration.

(2) The precipitating mental factors that often seem to bring about epileptic reactions in a potential epileptic, which range all the way from simple disorders of conduct to definite seizures, are types of stress and annoyance, causing a loss of spontaneous interest, and an intensive regression to day-dreaming, lethargies and somnolence. The attack occurs at the final break of a too severe tension, and psychologically may be viewed as an intense reaction away from the intolerable irritation, a regression to a primitive mentality comparable to that of infancy or intra-uterine life.

* Clark, "Some therapeutic suggestions derived from the newer psychological studies upon the nature of essential epilepsy," Medical Record, March 4, 1916.

(3) The therapeutic suggestions for a mental therapy in essential epilepsy would be to overcome, by proper training and education, the earliest beginnings of epileptic reactions in childhood. More particularly should the training concern itself with the eradication, as far as possible, of the defective instincts shown in egocentricity, supersensitiveness and rigidity of adaptation to the home and community. This is best brought about by (a) reducing and limiting the undue stress of the environment; by (b) steadily teaching the child adaptation to various types of stress so that he may ultimately be able to live a fairly normal life without exhibition of such grosser epileptic reactions as are shown in the seizures of his disorder. (c) The epileptic may be shown and taught to find a spontaneous outlet for his keen individualistic desires and thus manufacture his own interests in a heathful environment suitable to his needs and capacity.

(4) Even though many epileptics may be quite deteriorated, it is still often possible to train back their once discarded mental interest and thus restore much of their emotional and mental dilapidation. In the more favorable cases great improvement of the convulsive symptoms occurs in many such individuals and with the more or less permanent arrest of the disorder in not a few cases. A series of arrested cases of frankly pronounced epilepsies are cited to show the mental mechanism by which arrests have been brought about through an application of the foregoing therapy.*

* I wish to acknowledge my thanks to my nurse-trainers, and especially to Mr. T. E. Uniker, for valuable assistance in the minute observation of many of the cases incorporated in this study.